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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

SURGICAL ASPECT OF INTRACRANIAL TUMORS.*

BY J. T. DUNN, M. D.

Lecturer on Surgery and Demonstrator of Operative Surgery, etc., Kentucky School of Medicine.

The infrequency of intracranial tumors, the difficulties attending their diagnosis, location, and removal, is my plea for presenting this subject for your consideration this evening, and should this paper and the case referred to enable any member of this Society to more easily and certainly recognize an intracranial growth, I shall feel that my subject to-night has been well chosen. The subject of brain surgery is receiving more attention to-day than ever before, and results are being accomplished that only a few years ago were impossible.

The surgeon now opens the skull and pierces the brain with the aspirating needle, probe, or finger with the utmost indifference. He cuts, ligates, and drains its depths with impunity. The diagnosis and removal of intracranial tumors is much more accurately accomplished now than in former years. This is made possible by the increase in our knowledge of localization. There are many points in the brain now known positively to have certain functions, and pressure from any cause destroys the power of that center to do its duty.

The cause of intracranial tumors is not settled. They may be found to follow an injury to the skull, but usually no assignable cause can be found, except as predisposed by disease, tuberculosis heading the list.

* Read before The Kentucky School and Hospital Medical Society, December 19, 1901. For discussion see p. 22.

Starr's table of three hundred cases is as follows :

Tuberculous cases,	in childhood	152 to	41	in adults.
Gliomatous tumors,	"	37	"	54
Sarcomatous tumors,	"	34	"	86
Glio-sarcomatous tumors,	"	5	"	25
Cystic tumors,	"	30	"	2
Carcinomatous tumors,	"	10	"	33
Gummatous tumors,	"	2	"	20
Not stated,	"	30	"	41
Out of a total of 600,	"	300	"	300

Tuberculosis in children heads the list as being the cause of one hundred and fifty-two cases of intracranial tumor in three hundred cases considered. Thus we observe that more than half of all intracranial tumors in children are tubercular, and that the proportion is four in children to one in the adult. Cysts occur largely in children, thirty as compared with two; while glioma, sarcoma, glio-sarcoma, carcinoma, and gumma preponderate in the adult.

It is interesting to consider for a moment where these tumors are usually located in the calvarium. Take six hundred and thirty-seven intracranial tumors reported by Gowers, and we see that two hundred and ninety-seven were found in the cerebrum, one hundred and seventy-nine in the cerebellum, fifty-nine in the pons, forty-eight in the central ganglia, thirty-one in the medulla, thirteen in the corpora quadrigemina, and ten in the crura cerebri.

Three varieties of tumors, namely, cyst, fibroma, and osteoma, usually have capsules or well-defined outlines, while malignant and tubercular growths usually infiltrate into the brain, which fact demands the removal of more surrounding tissue than would be necessary in well-defined tumors. Symptoms of intracranial tumors require careful study, and a fair knowledge of brain anatomy is essential to make an accurate diagnosis.

Headache is usually an early symptom, is often agonizing, and is apt to be most severe at the location of the tumor. Too much dependence must not be placed in this symptom, however. Pain is a common symptom, and is especially indicative of tumor if percussion causes or increases it. Vomiting, especially if cerebral in character, is a very valuable diagnostic symptom. Convulsions are manifest in proportion to the increase of pressure. These convulsions are either general or localized. If the latter, they are of exceeding great value. If convulsions begin always in the same finger, hand or foot, the diagnosis

would be practically made. Vertigo is a common symptom, especially in tumors of the cerebellum. Eye symptoms are interesting.

Choked disc is another pressure-symptom which appears as soon as the tumor is large enough to cause undue intracranial pressure. It is usually double, and indicates nothing but the presence of a tumor, unless it is monocular, then it indicates that the tumor is most likely in the opposite hemisphere. Vision is not interfered with until secondary atrophy of the nerve takes place. Homonymus hemianopsia indicates a lesion in the cuneus on the side in which it occurs.

Hemianopsia denotes half vision. Homonymus hemianopsia denotes that vision is lost in the right half or left half of each retina. Thus, if the right cuneus is the seat of a tumor, the right half of both retinæ will be blind, and *vice versa*. The pupils are usually dilated and insensible to light, though they may be contracted. Paralysis will occur if pressure is made upon the face, arm, or leg center. Complete hemiplegia will result if these three centers are subjected to great direct pressure, or paresis will result if the growth is deep and makes only moderate pressure. Anesthesia will not be a symptom unless the internal capsule is involved.

Large tumors produce very marked mental symptoms. Stupor and coma usually occur before death. Mental activity is below par, and memory is lost. Such mental disturbances as word-deafness (loss of memory of sound of words), word-blindness (loss of memory of appearance of written words), agraphia (loss of memory of movements in writing), apraxia (loss of perception of use, odor, color or taste of any object perceived through any of the five special senses), are produced by pressure, and indicate a lesion in a certain portion of the brain. Thus (*a*) word-deafness indicates a tumor in the rear half of the first temporal convolution on left side; (*b*) word-blindness, a tumor in lower posterior portion of the parietal lobe on the left side; (*c*) agraphia, tumor beneath the motor center of speech (Broca's convolution); (*d*) apraxia, tumor in the supramarginal or angular gyrus on left side.

Diagnosis. There is no doubt that many cases of intracranial tumor develop and a diagnosis of the location can not be made, but a study along the following line will aid in this important step. Six questions should be answered:

1. Does a tumor exist? Headache, pain, vertigo, cerebral vomiting, convulsions (general or local), paralysis, choked disc, optic neuritis, dimness of vision or loss of sight, involuntary passages from bladder

and bowels, later, stupor and coma, are the general symptoms; only a portion of them may be present in any case, though all may be.

2. What is the location of the tumor? If headache, vomiting, choked disc, and optic neuritis complete the list of symptoms, a diagnosis can not be made; but if paralysis of some portion of the body known to have a definite controlling center exists, or some of the localizing symptoms, such as referred to above, make their appearance, then the diagnosis is made with considerable accuracy.

Rapid blindness usually occurs in tumors located in the cerebellum or pons on account of the pressure on the iter a tertio ad quartum ventriculum, resulting in hydrocephalus, pressure on the optic tract, choked disc, and finally complete blindness by atrophy of the retinae.

3. At what depth does the tumor lie? Superficial tumors may possibly cause a local rise of temperature, and pain may be elicited by pressure upon the scalp immediately over the tumor, and involvement of motor centers is quite common. If the tumor is deep-seated, the internal capsule is usually involved, and anesthesia will be present.

4. Is the tumor single or multiple? If only one center is involved, the tumor is single, in all probability; but if two or more centers are affected, especially if far apart, the chances are that you are dealing with a multiple tumor.

5. What is the size of the tumor? If a small area of brain is involved and intracranial pressure is not marked, the probability is that the tumor is small. On the other hand, if the involvement of a large number of centers and decided indications of intracranial pressure are presented, the diagnosis of a large tumor is very apt to be correct. Tumors weighing three or four ounces are considered large.

6. What is the nature of the tumor? If a history of syphilis, tubercle, or cancer is clear, the chances are that the intracranial growth is of the same nature. Tubercular tumors are more apt to be multiple than of any other variety. The fact that tubercle occurs up to the age of twenty more frequently than any other is a valuable point to keep in mind, but would not warrant one in proceeding to treatment without further consideration. Between the ages of twenty and forty glioma and sarcoma are most common.

Prognosis. Intracranial tumors are necessarily fatal if not relieved by surgical means, except syphilitic growths which will yield to the iodides. One or two years usually result in death if allowed to run an uninterrupted course. In the face of this fatal prognosis the surgeon

is warranted in taking desperate chances to save his patient. Surgery has yielded splendid results and should be considered imperative except in very large, multiple, or deep-seated tumors; and even then great relief is afforded the patient by the simple act of opening the skull, thus lessening the intracranial pressure and symptoms incidental thereto. Prognosis should be considered from two points:

1. *As to Immediate Recovery.* Chipault reports sixty-seven operations, with forty-seven recoveries and twenty deaths; again, forty-seven cases of suspected tumor with no tumor found, with the result of thirty-five deaths and twelve recoveries. The extensive search which was probably made in the effort to locate the tumor is quite likely responsible for this high mortality. These figures show that it is decidedly less dangerous to operate and remove an intracranial tumor than to operate and find no tumor, provided an extensive search is made. Great caution should be used, then, in searching for a supposed tumor, and if not readily found and removed the operation should be terminated.

In seven cases trephined for the relief of pressure-symptoms caused by tumor, recovery followed in all. In this disease, like many others, the physician is the first to see the case, and, through his hope to relieve the patient by medicines, he allows the trouble to become one of serious magnitude before consulting the surgeon.

These brain tumors should be removed at the earliest possible moment, just as tumors in or about the body elsewhere; in fact, tumors of the brain will cause more trouble by delay than they will elsewhere. All agree that medicines should have a first and fair trial, after which it is a waste of valuable time to defer operation.

In tumors of the cerebellum fatal results have occurred three times out of five in operation for their removal. They are so close to the fourth verticle, the tubercula quadrigemina, the pons, and other important vital centers that operation for their removal is particularly dangerous, and as the removal of a large portion of the occipital bone will give great relief to all pressure-symptoms, some advise this step only.

2. *As to the Ultimate Result.* Malignant tumors will return, as a rule, but tubercular, syphilitic, and benign growths will not usually do so. In any event, the damage done to the brain by the growth of the tumor will not be remedied after its removal, consequently, if optic neuritis has continued long enough to result in atrophy of the nerves, vision is forever gone. Paralysis will be permanent in the great majority

of cases if a tumor has pressed upon a motor center long enough to destroy its energy. Likewise we account for the epileptic habit.

Treatment. Through a large scalp flap the skull is opened by a trephine at least three fourths of an inch in diameter, and enlarged to suit the indications with a heavy pair of bone forceps or chisel. The dura should be opened, the tumor located, and then removed by enucleation, if possible, with the finger, knife, scissors, or spoon. Its removal will be attended with much more difficulty if it is subcortical, it being necessary then to incise the brain.

In all cases of tumor where it is not positively known what kind of tumor you are dealing with, it is advisable, I should say, to first make use of the aspirator to determine the probability of its being a cyst, thereby obviating the necessity of producing unnecessary trauma to adjacent brain-tissues. I am sure that in the case which I shall presently report, had I not determined by the use of the aspirator that I was dealing with a cyst I would have done far more injury to the cerebellum than I did, for, after evacuating the cyst with the needle, it was an easy matter to explore its location and attachments.

This case, which I present to you to-night, should emphasize the fact previously mentioned in this paper, that loss of vision is the inevitable result in these cases where intracranial pressure is not relieved by an early operation. The history is as follows:

Boy, twelve years old, of good family and individual history. Close questioning failed to elicit the history of an injury of any kind to which any head trouble could be traced until after the boy was dismissed from the hospital. He then told me of a fall he had received three years ago, over the banisters from the ninth step, alighting on a brick pavement upon the back of his head, and was unconscious for several minutes, but had no trouble after that until May, 1900, about nineteen months ago, or seventeen months after the fall over the banister. In May he complained of his sight and of eyeache. At school his teachers also noticed that his sight was bad. The eye symptoms became progressively worse, and in October of the same year nausea and vomiting, with involuntary passages of urine—first at night, later in the day as well as at night—were the distressing symptoms which would finally culminate in an attack, which consisted in drawing of the muscles in the back of the neck, vomiting, frothing at the mouth, and agonizing screams of "Oh, my head!" This set of symptoms continued to increase in severity and frequency; nothing gave relief. He came to me June 17, 1901, with the above history.

The headache, nausea, vomiting, eyeache, dullness of vision, dilated, insensible pupils, and optic neuritis were indications of intracranial tumor, but did not give the slightest idea of its location. A search for localizing symptoms was made, which resulted in the discovery that he had a staggering gait, with the head and chest thrown back; not only this, but the very important point noted that he always walked to the left. This was the solution of the situation. The typical cerebellar gait, with locomotion to the left, meant that the pressure was in the middle lobe of the cerebellum, and upon the right side. This diagnosis was corroborated by a nerve specialist, who declared it to be an exceedingly interesting and rare case.

The question of diagnosis being settled, the prognosis without the aid of surgery was also easily settled, as all the little sufferer's symptoms were becoming rapidly worse, and all concerned were anxious to have something done, in spite of the fact that removal of cerebellar tumors is attended with high mortality (three out of five die).

He entered the Children's Hospital July 17th for the purpose of observation preparatory to operation. At this time his sight was entirely gone. His record there up to the time of the operation on August 7th shows that his bladder and bowels would always act involuntarily. On July 24th he complained of severe pains in the back of his head, which finally extended to the front. July 29th voided urine involuntarily eight times, and had considerable frothing at the mouth at intervals all day, and vomiting. These attacks were repeated at intervals, and gradually increased in severity. Sleep was more or less disturbed. The pulse, with the exception of an occasional drop to 80, stood at 100, and the temperature, which was variable, ranged from normal to 100°, with an average of about 99° for three weeks before the operation. As the only possible relief was through surgery, I felt it my duty to operate. On August 7th the operation was done. One of my assistants, when told what the operation was to be for and where it was located, made the "very encouraging" remark that "if he comes off the operating-table alive he will be fortunate."

The operation was done as follows: The scalp, having been prepared in the routine manner, was incised at the base of the occipital bone on the right side of the median line and just below the lateral sinus. A semi-lunar flap was raised and the occipital bone exposed. The course of the lateral sinus was now outlined and the trephine set so as to remove a three fourths inch button on the right of the median

line and below the lateral sinus. As soon as the bone was removed the evidence of intracranial pressure was very positive, the dura bulging into the opening with such force that pulsation could not be detected. Depressing this bulging dura with my finger, however, not only enabled me to feel the pulsations, but my finger was seen to rise and fall with each heart-beat. The next step of the operation was to open the dura. This, I think, was a mistake, for a hernia of cerebellar structure was the result of the incision in the dura, so great was the internal pressure. I should have aspirated before opening the dura. An attempt to replace this hernia was useless, and to prevent it by compression was impossible. At this point the aspirating needle was inserted. Selecting a needle with a fair sized opening, it was passed into the middle of the right lobe of the cerebellum in a direction inward and forward toward the under surface of the middle lobe to the extent of about two inches. One ounce of straw-colored albuminous fluid was withdrawn. As this fluid was aspirated the pressure was decreased and the hernia disappeared. The needle was withdrawn, a grooved director entered in the same direction, and the tract spread to permit of drainage, and two or three drachms more of fluid escaped.

By gentle dilatation I was enabled to insert my little finger nearly its full length into the brain and cyst, which had been evacuated. After thus examining it, I decided not to attempt its removal, as I believed its wall to be a portion of the membranes supporting the brain, and that it could not be removed safely. Gauze drainage was introduced into the cyst, the dura and scalp closed. He left the operating-table with a pulse of 120.

On the morning after the operation he was able to see an object placed near and at one side of the eye, and the pupils were slightly contracted. The night following the operation he called for the urinal and voided naturally six ounces of urine, the first time he had felt the desire to urinate in ten months. Bowels were sluggish and required daily use of enemas to obtain results for about two weeks. The kidneys were unusually active for two months after the operation, passing occasionally as high as fifty-nine ounces in twenty-four hours.

The wound drained well for a few days but finally stopped, and the cerebellum began to protrude; the gauze drainage was removed, as it was doing no good. Headache began again on the 20th, just two weeks after the operation. This combination of symptoms indicated an accumulation. On the 21st he again passed urine involuntarily, and so, one

by one, the original symptoms began to reappear, including loss of what little sight he had.

I decided again to open up and attempt to establish better drainage by using rubber tubing instead of the gauze. This was done on the 24th, four drachms of fluid being removed by aspiration, two drainage-tubes inserted, and the wound closed.

Convalescence was tedious, but he has made a good recovery with the exception of vision, which, I am told by specialists, will never be restored. He is absolutely as well as he ever was, as far as his general condition is concerned. The only regret in this case is that the relief did not come sooner.

LOUISVILLE.

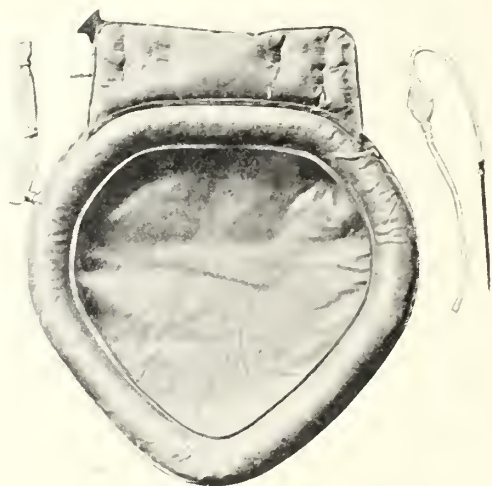
THE EASEMENT OF LABOR BY USE OF HEAT AND THE RETAINED INJECTION.

BY WILLIAM A. GALLOWAY, B. SC., M. D.

The application of heat for the alleviation of pain has been known from the earliest period of medical history as a means simple and effective over a wide range of ailments, and has been extensively used because easy to obtain when needed by nurse or physician. The universal use of the hot-water rubber bottle has been so helpful to lessen the pains of humanity that if the name of its originator could now be obtained he would easily rank as a benefactor to the race.

Heat and moisture are such familiar agents in the relief of pain and the prevention of shock that any means extending their service naturally enlists the interest of the profession. The use of heat in confinement, to the extent of the means at command, is routine with many physicians. Cloths wrung out of hot water and applied to the perineum, hot flannel compresses over the abdomen, and hot-water bottles to the feet are helpful in maintaining the patient's comfort. Douching the vagina with hot water during labor, although recommended by some authors and practiced to a limited extent by some physicians, is objected to, because it washes away the normal secretion of the vaginal glands and does not afford sufficient stimulation for resecretion along the vaginal tract, an important condition to maintain during the second stage of labor.

No means seem to have been devised to overcome this objection and at the same time obtain the soothing and relaxing effects of hot water upon the rigid os, the vagina, and the perineum, and also the soothing effect of heat on the lumbar muscles. Some years ago the writer devised and had made an obstetrical rubber bedpan, with a continuous



THE GALLOWAY OBSTETRICAL EQUIPMENT.

Showing the pan and attached hot-water pad, syringe, and douche, and rubber tampon bag.

and inflatable rim, and a sagging bottom with a drainage-way attached. After experiences with the bucket into which the drainage emptied, and the drainage-way emptying its contents upon the floor, it was abandoned and a tight bedpan substituted for obstetrical work. This pan was much more satisfactory, but the patient frequently complained that the inflated rim hurt her back. When the pan was slipped downward to obviate this, the rim was flattened by the weight of the hips, and the clothing and bed soiled by leakage. Notwithstanding these serious disadvantages, common to other bedpans, much comfort and cleanliness were obtained.

Recognizing the great value of heat in labor, if used properly, the writer's brother, Dr. C. M. Galloway, began to extend the use of this pan by making it a receptacle for receiving injections of hot water made into the vaginal tract and retained between pains by compressing together the sides of the vulva until, with the onset of the pain, the hot water was slowly expressed—not washed—out into the pan. The result in comfort, relaxation, and shortening the period of labor, even

though dry, was so marked that extension of this method was developed as quickly as the experience of a double practice would permit. This followed an experience, in 1893, wherein an especially severe hour-glass contraction was rapidly relieved by a continuous hot-water flow against the constriction. Subsequent hour-glass contractions have yielded to hot water as readily as did this one.

For the convenient and comfortable use of the retained injection in labor, and for obtaining more perfect results from heat in the easement of pain and nervousness during delivery, it became necessary to devise an obstetrical pan embodying the necessary elements for the use of heat to the back as well as to the pelvic organs. To the inflatable rim of a general design used in the first bedpan, I have added an ample bottom with a rounding attachment to the under surface of the rim, so that there is no creasing at the line of juncture of the bottom and the rim for the lodgment of any foreign matter, the scouring-brush and water easily reaching every portion of the pan. By the addition of an ample hot-water pad to the back of the pan, heat and support are afforded to the back and a perfect dam is formed, reinforcing the rim at its heretofore leaking point under the back and hips.

With this description of the accompanying cut of the Galloway Obstetrical Pan, the technique of the use of heat and hot water through this means, and a note of the general results following, will be of interest. When true labor is begun and the os dilated the size of a dime or quarter of a dollar, a quart of hot water is put^{*} in the water-pad, the water-valve closed, and the pad blown quite full of air; the rim of the pan is inflated with air, the pan rinsed with hot water, dried, and put under the patient. The air in the water-pad is then let out through the air-valve until the patient indicates that the support to her back is perfectly comfortable. From the time the heat in the water-pad begins to be felt, the back pains and the nervous phenomena from this cause, familiar to all physicians, are so greatly relieved as to practically change the vexing character of this part of labor. The hot-water pad is helpful as a body rest, a back support, and a means for the soothing application of heat to the lumbar plexus of nerves.

With the dilatation of the os above noted, a series of four or five retained hot-water injections is begun; the douche is carried up into Douglas' cul-de-sac and the vulva closed around it with the thumb and first finger of the hand not occupied with the attached syringe. One pint or more of hot water, bearable to the hand, is gently

pumped into the closed vagina, and is retained from the completion of one pain until gently expelled by the bearing down of the next. After the third or fourth injection the os is relaxing, and during pains it may be readily expanded by carrying two fingers with an upward pressure around its upper edge.

After completion of the first series of injections a rest of ten minutes may be taken, then a second series of the same number of retained injections should follow. With each pain, when fully on, the os can readily be dilated. Upon completion of this series the os can soon be slipped over the occiput, or sufficiently enlarged to admit the easy application of forceps if desired. Following the second series of retained injections, the vaginal tract becomes thoroughly lubricated through stimulation of the vaginal glands. This use of heat relaxes to their



FIG. 1. The para rubber bag in place on the douche and inflated with air.

full extent the os, the vaginal walls and perineal muscles, and gives an opportunity to the physician to assist his patient and enormously shorten her time of labor. Consequent saving of her strength and nervous force is followed by rapid convalescence. If the physician does not wish to assist in dilating the os, labor is still greatly relieved by the anesthetic and relaxing effect of the retained injection and by comfort of the hot-water pad to the back.

In these injections the hand determines the degree of heat. Water, not too hot for the hand, should be used for the injection. The patient will frequently request that some of the hot water be left in the pan because of its comfort to her hips. The pan is emptied of the hot water as often as necessary by reversing the syringe and pumping out

into a convenient vessel, or by removing it in the ordinary way. Boiling water can at any time be pumped through the syringe to render it aseptic. When full dilatation of the os has taken place, hot water retained injections are discontinued; an inflation bag made from the highest grade of para-rubber, after aseptic preparation, is then slipped over the douche and made fast at the end by a slip-ring; with this at his side the physician has an immediate tampon for post-partum hemorrhage. A free slip-ring is placed equidistant from each end of the bag, the bag dampened in water, passed upward into the uterus and inflated with air first, then cold or hot water sprayed into it if desired.

Fig. 2 shows the tampon in place on the douche and inflated. This is an emergency tampon for use until the physician can decide what else, if any thing, is needed. For the relief of hour-glass contraction the douche is passed up the vagina and carefully insinuated between the placenta external and the constricting band until its tip rests against the constriction; in this position hot water is gently and intermittently thrown against the contracted womb until it relaxes. The pan forms a perfect receptacle for the escaping water; the syringe and the douche are accessories always at hand for use in this trying situation. The proper use of the anesthetic and relaxing qualities of heat is the principle about which this method centers; its corollary is that the physician is doing something to help his patient, a fact in itself of great advantage to every physician in the successful conduct of accouchement. The further question arises as to the proper antiseptic care of the rubber obstetrical pan or the rubber surgical pan. Two points are essential: First, that these pans should be made only of the highest grade of suitable smooth rubber, which can, when desired, be cleansed with boiling water. This grade of rubber is expensive compared with that ordinarily put in surgical pans made in commercial competition. To control the quality of rubber used in this obstetrical pan, the writer retains letters of patent upon it. Second, the general care of obstetrical and surgical pans when not in use. The Kelley pan is a landmark in obstetrical progress, but certainly the inventor never contemplated the use of the class of rubber found in many pans now manufactured, nor did he expect, as the writer has too frequently observed, that these pans would be hung up on any convenient nail in the open air and dust of a back office, or a catch-all room, or worse yet, in a closet with last year's buggy robes or overcoats. Unquestionably

such exposure of an ordinary quality of rubber to air will quickly crack or craze it, and contact with such companions will quickly infect it. The proper care of an obstetrical or surgical pan is simple—not tedious or burdensome. Wash with hot water, then dry with a clean towel before placing the pan under the patient; this requires only a few moments. Soap and hot water are sufficient and ready means for cleansing after accouchement, providing, of course, that every part of the pan is accessible. Subsequent office care is easy, and requires attention only when the physician has leisure.

For this purpose a three-gallon jar or galvanized iron bucket, filled with two gallons of clean water, is a proper container for rubber pans or other good rubber goods. One to two teaspoonfuls commercial carbolic acid, one teaspoonful boracic acid, one teaspoonful solution gum tragacanth are added to the water; the pan is allowed to remain in the bucket for two or three days; it is then taken out, thoroughly rinsed and wiped dry, wrapped in a clean napkin, and put in an obstetric bag or in a clean drawer or instrument case protected from air and dust until needed for use. When taken out of this solution the rubber should have a slight odor of carbolic acid. With this easy care good rubber can be kept perfectly clean and its life extended much beyond the usual limit. With the two methods for asepsis herein given, if the best grade of suitable smooth finished rubber only is used in the making of an obstetrical pan, there need be no fear but that a perfectly aseptic pan is ready in every case of delivery. If to this is added the complete cleanliness of patient's bed and clothing and the easement and shortening of her period of labor, much indeed is at hand to aid the patient in parturition and save valuable time to the busy physician.

XENIA, OHIO.

**EXTRA-UTERINE PREGNANCY: OPERATION AT 266TH DAY:
RECOVERY.***

BY D. C. BOWEN, M. D.

It is not the purpose of the essayist to introduce to this Society to-day any novelty in the treatment of ectopic gestation, but simply to recall the great importance of early diagnosis and to emphasize the already well-known facts, in the hope that it may lead to an early recognition, or at least to a more prompt action toward the institution of the best means that are in any way promising to the mother and oftentimes the only means of saving the child. The success of the operative intervention so often depends on its early performance that the question of diagnosis becomes second only in importance to that of treatment. Lawson Tait says that all extra-uterine pregnancies are to be considered primarily tubal, and that the other varieties are developed after rupture. We will assume that this is correct, and leave the sub-classification to men of like eminence and experience.

It is said that extra-uterine fetation may be produced by any condition which prevents or renders difficult the passage of the ovule to the uterus, while it does not prevent the spermatozoa reaching the ovule. This is brought about by various morbid conditions, such as adhesions from peritonitis, inflammation of the mucous coats of fallopian tubes, polypoid growths, pressure of uterine or other tumors, and that of chronic salpingitis. Tait thinks this to be the most common cause. Playfair says that a curiously large proportion of cases occur in women who have been previously sterile, or in whom a long interval of time had elapsed since last pregnancy. He also says that the progress and termination of tubal pregnancy in the majority of cases is death; produced by laceration, giving rise either to internal hemorrhage or to subsequent intense peritonitis or to septicemia. Rupture usually occurs at an early period of gestation, and, according to the best authorities, at from the fourth to twelfth week. The diagnosis of tubal pregnancy, prior to rupture, is unfortunately difficult, and no doubt that many cases end in death without any suspicion of the nature of the case, the practitioner attributing death to colic, hematoma, etc. If we are called to a case of supposed colic with symptoms of early pregnancy, in which there are irregular losses of blood, with possible discharge of membranous shreds, and abdominal pain, a careful and painstaking

* Read before the Muldraugh Hill Medical Society, December 12, 1901.

examination should be made, bearing in mind the difficult differential diagnosis, which is sometimes impossible; if the true nature of the case be made out, we are at once better able to give intelligent advice.

The treatment by laparotomy is the only one to be recommended. If there is the slightest suspicion of the existence of tubal pregnancy, based on rational and physical signs, we should on no account wait until symptoms of impending rupture have made their appearance, or until that accident has occurred, but at once procure competent assistance and remove the ovisac and contents by laparotomy. The writer hopes to further elicit discussion on this important subject by reporting the following case: J. C., colored, age thirty-four, married. I delivered her of a living child, with forceps, May 2, 1900, and an uneventful recovery followed. The family history excellent. Having treated her husband for gonorrhea previous to their marriage, I felt quite sure that she had become infected, and, upon investigation, found that she gave a history of salpingitis, following marked symptoms of gonorrhea; otherwise history was good. On December 26, 1900, I was called and found her suffering from agonizing pelvic pains; cold extremities, face bathed with cold sweat, rapid and feeble pulse, nausea and occasional vomiting, and in a state of collapse.

Digital examination per vaginam revealed slight discharge of serum, patulous os uteri, with slight enlargement of womb; also gave a history of morning sickness and missing one menstrual period. I gave a hypodermatic injection of morphia $\frac{1}{4}$ gr., atropia $\frac{1}{160}$ gr., applied cold pack to abdomen, hot applications to extremities, and during the two hours that I remained with her gave hypodermatic injections of strychnia and nitro-glycerine, and at the expiration of this time she had reacted sufficiently for me to leave. I left $\frac{1}{4}$ gr. of morphia to be given every three or four hours per oris as necessary to relieve the pain, also ordered cold pack continued, and to remain in the recumbent posture. Called next day and found her doing very nicely. No temperature, pulse 96, some periodic pelvic pains, and complaining of weakness. Treatment continued; patient ordered to keep perfectly quiet in bed for two or three weeks, and if symptoms returned to let me know.

This was the last that I saw of case till July 14, 1901. I heard occasionally from her through her husband, who came for medicine, saying that she was still threatened with a miscarriage. My diagnosis at the time of visit in December was rupture of the tube from tubal pregnancy, with resulting hemorrhage. After a time the case was

thought of as a mistaken diagnosis, then passed entirely out of mind until I was called again the 14th of July, finding the intermittent pains in back and abdomen. I made a careful examination, introducing my index and middle fingers into the vagina; came in contact with a bulging cul-de-sac. With my right hand to press uterus down into pelvis, I inserted the index finger of left hand into uterus; at the same time was able to outline the fundus as being separate from the main tumor, which lay above and to the left. No history of having passed the decidua, but said she had felt the movements of child frequently.

I was thoroughly convinced that my first opinion was correct; that I had to deal with a case of ectopic gestation, and, on calculating the time, found that she was at or about her 226th day, and that I had a fair chance of saving both mother and child if I could prolong the time, hoping that nature would give the signal for action. I told them that all was not quite right, and that we would trust nature to carry her nearer term, and that they must call me on the slightest symptom. This was the last I heard from case till August 21st; found her with the symptoms of labor rapidly approaching. I resumed the morphine treatment, hoping to postpone till I could have her prepared for the operation. I now gave them my opinion of the true nature of the case for the first time, and advised operative measures, which was readily consented to, as I had been preparing the way for some time. I gave explicit directions in detail how to prepare patient and room for the operation, telling them that I would be back next day to meet the doctors, and that we would then be governed according to our best judgment. I asked Drs. Aud, Nusz, and Brownfield to see the case with me, which they did on the 22d, concurring in diagnosis. We set the 24th to operate, and, after the strictest precautions in the minutest details of preparing patient, room, instruments, and dressings, I, assisted by Drs. Aud, Nusz, Ligon, Brownfield, Glascock, and English, did a celio-cystotomy. After removing fetus, which, to all appearances, had been dead for a week or ten days, and about two or three gallons of foul liquor amnii, we found placenta attached to the left broad ligament, which I peeled off with my fingers without any trouble.

There was but little hemorrhage, which was controlled with hot-water douche. After cleansing sac with sterilized water, we washed out the peritoneal cavity with normal salt solution, as there had been leakage into this cavity. The sac was closed by continuous sutures, which included parietal peritoneum, leaving space for gauze drainage

at lower portion of incision ; brought the abdominal muscles and skin in apposition in the usual way by interrupted sutures ; applied the usual dressings and a snugly-fitting binder.

I forgot to say that on the morning of operation patient told of having passed the decidua ten days previously, and that the uterus was pushed down to the left and over the pubic arch till it was perceptible and felt much like the placenta *in situ* after normal delivery of baby. The patient was in a state of septic infection ; temperature 100° to 101.5° F. ; pulse 120 to 130. The convalescence was uneventful ; pulse began to fall, and by the third day had receded to 96. Temperature by this time had become normal, and remained so throughout. In twelve days wound had healed perfectly and patient sitting up, and was able to move about by the twenty-first day and was doing light work. And now she is well, and is, to all appearances, in perfect health.

NOLIN, KY.

Reports of Societies.

THE KENTUCKY SCHOOL AND HOSPITAL MEDICAL SOCIETY.*

Stated Meeting, December 19, 1901, the President, William A. Jenkins, M. D., in the Chair.

Epileptiform Seizures Following an Operation for Appendicitis. Dr. J. W. Irwin: A graduate of the Kentucky School of Medicine of about a year ago consulted me two weeks ago with reference to a singular condition of his new wife. He had been married a few months, and prior to his marriage the young woman had been operated upon six or seven months previously for appendicitis. She was confined in an infirmary or private hospital at Evansville, Ind., and the proprietor of the hospital did the work. He did the operation, and, so far as life is concerned, and so far as removal of the appendix is concerned, the results are satisfactory.

About six weeks ago this woman began to develop nervous paroxysms, coming on at irregular intervals of sometimes every second day, sometimes two or three times a week. Lately they have occurred as often as three times a day. She would go into a state of unconsciousness, and while she would not fall backward, nor would she foam at

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

the mouth, nor would she have any premonition of the attack coming on, yet there was a certain amount of rhythm, showing certain indications of epilepsy. Various remedies have been administered without relief.

The case came under my observation two weeks ago, and in an examination I found that the right ovary had been drawn away from the body of the uterus to the extent of three inches, with a mass of hardened material just below and at the bottom of the cicatrix left after the operation for appendicitis. I believe the ovary is incarcerated in the cicatrix, and by reason of the irritation incidental to the cicatrix, and also to the displaced condition of the ovary that is incarcerated, that this is the focal point of irritation; and to prove that I was correct in this matter, I made a few applications locally of equal parts of the compound tincture of iodine and pure carbolic acid, and while vesication existed there was no return of these paroxysms, of these nervous attacks, but, after the wound healed, in three or four days she had another attack. Menstruation is now upon her, and during menstruation she has had three attacks in one day, showing that the engorgement incidental to that function is causing a greater amount of excitement, and that she is undoubtedly on the verge of permanent epilepsy from the local irritation.

This case bears out one view of the cause of epilepsy, and that is an adherent prepuce. You will find a great deal written about that, perhaps a great deal too much, but it is one of the causes that might be considered analogous, and I think I shall have to refer her to the abdominal surgeon to have this ovary removed or liberated from the mass, which will cure this patient so long as the habit has not become fixed upon her. It has existed now for two months only.

Discussion. Dr. W. H. Wathen: No one can discuss a case of this kind so well as the man who has examined the patient carefully and watched the condition, and has observed the pathological condition of the organs referred to.

While the experience of abdominal surgeons in operating for epilepsy by removal of the uterine appendages where there was no disease has been abandoned because of almost universally bad results or failure to benefit the patients, we have found that where there is a local disease in the generative organs that is the cause, as it sometimes is, of epilepsy or of any form of nervous disturbance, the removal of these

diseased structures very frequently, and, I might say, almost universally, results in relief of the nervous trouble. But, just as Dr. Irwin has suggested, there is danger of delaying operative intervention too long; the habit may become so engrafted upon the nervous system that the final removal of the diseased organs, though the primary cause of the trouble, will not result in relief of the epilepsy or nervous trouble; therefore operation should be performed as early as possible, before the epileptic habit has been formed.

I have operated quite frequently in these cases, and many years ago operated several times for the purpose of removal of ovaries but little if any diseased, and, I must say, generally with no very good results. There is, however, one condition of the ovaries that might not, in the minds of many people, seem to justify their removal, in which the results are often very gratifying; that is where the ovaries are in a state of cirrhosis or fibrosis, frequently following measles in early childhood, scarlet fever, typhoid fever, etc. I have had a good many cases of this kind, and operation was followed by the most favorable results. I must say that the text-books do not dwell sufficiently upon this part of the subject.

I operated recently rather against my own judgment and under protest upon the wife of a well-known doctor in Indiana, who has for many years been suffering with a mild form of epilepsy, occasionally resulting in a general epileptic seizure. The doctor believing from close observation of the patient that an operation upon the vagina at its entrance upon the uterus would be of benefit, I consented to do so, putting the responsibility upon him, and saying that the diseased condition needed removal independent of the nervous trouble. In this case I thoroughly curetted the uterus, which needed it badly, for chronic asenile endometritis, so-called. The vagina had, by asenile atrophy, so contracted that sexual intercourse could not be permitted. The vaginal walls had thinned very much; the lower half of the vagina was not at all elastic, and could not be dilated. In this case, after curetting the uterus, I made a longitudinal incision, splitting the posterior vaginal wall down to the rectal wall, all the fascia and connective tissue between these two structures for an inch and a half up the vagina and down nearly to the perineum, then dissected the vaginal wall and connective tissue and fascia off laterally and united this longitudinal incision transversely, thereby making the vaginal entrance one third larger than it was before the operation. I then, the woman having

had incontinence of urine, made a deep incision each side of the urethra and sutured this incision in the opposite direction.

For the first few days, until the woman was entirely out from under the influence of the anesthetic in a systemic way, she was nervous occasionally, becoming for a few minutes unconscious. She remained at the infirmary two weeks longer, and during that time, though she was walking around over the infirmary before she left, she had no further trouble, and returned home apparently relieved. What will be the future outcome of the case I do not know.

Dr. W. F. Boggess: In regard to epilepsy and the removal of the uterine appendages for the same, my experience has been rather discouraging along these lines. I have had three cases where the very best diagnosticians decided that the uterine appendages were the possible foci of disturbance and produced epilepsy. While any thing you do for an epileptic, either in the way of an operation or any new treatment, may do good for a while—will lessen the epileptoid seizures—yet in every one of these cases the condition afterward was just as serious as it was before, if not more so. There are many factors in cases of epilepsy that must be looked into in trying to determine the irritating focus.

I would never suggest so serious an operation as removal of the uterine appendages as a cure for epilepsy. I certainly admire Dr. Irwin's diagnostic ability in discovering that the ovary was up in the cicatrix of the appendicitis-cut, three inches from the uterus; but even if this is the case, you will find the mere cicatricial tissue of the wound itself might be sufficient to produce epilepsy, or adhesions around the clitoris might be sufficient to cause epileptic attacks. If the patient was mine, unless there were other indications for removal of the uterine appendages, I would certainly not suggest a laparotomy for relief of this condition.

Dr. J. W. Irwin: There was no neuropathic history in this case. The family history I obtained from the father and mother, as well as from the patient herself, and up to the time of her marriage she had no indication of epilepsy, nor does she now fall down in a convulsion, but there is a rhythmic condition which indicates she is very near to it.

In view of the fact that the ovary is incarcerated in the cicatrix, how are we going to remove the cicatrix without removing the ovary? If possible, the operation might be done through the vaginal wall, and if the ovary could be saved, of course this would be eminently proper.

There is no irritation about the uterus, the clitoris, nor the urethra; there is nothing local further than I have mentioned, and there is no unusual disturbance connected with the act of copulation. These attacks coming on at every menstruation, gradually increasing in severity, we have come to the conclusion that it must be connected with the incarcerated ovary in this cicatrix. It is, of course, impossible to tell whether it is the cicatrix or the ovary which is responsible for the trouble. If the ovary is not diseased, it should, as a matter of course, be saved.

While Dr. Boggess is right in some respects in regard to any new treatment benefiting the epileptic in a temporary way, yet the local application of a counter-irritant in the vagina as near as possible to this incarcerated ovary stopped the attacks. It looked to me very much like cause and effect; at all events, I would advise an operation, through the vagina if possible, for the removal of this ovary if it is found diseased. It would not do to fix upon this woman the epileptic habit. She is otherwise a perfectly healthy woman.

The essay of the evening, "Intracranial Tumors," etc., was read by Jesse T. Dunn, M. D. [See p. 1.]

Discussion. Dr. J. W. Irwin: This case is of unusual interest. The essay we have heard to-night upon this subject is one upon a high plane; it is worthy of the eminent surgeon who has narrated it to you; it is worthy of any surgeon. When you come to consider the short time in which brain tumors have been removed at all, the progress made in this direction surpasses almost any other feat of surgery known to the medical profession.

When Broca first operated, in 1881, it was for tubercular tumors of the brain. He was soon followed by Macewen, then by Hirshfield, Horsley, and others. The great credit, however, of brain localizations, which are now known to be of such diagnostic importance, is due to the investigations of David Farrier, who gave us data pointing out certain symptoms referable to the motor centers of the brain, and to lesions of these centers causing paralysis. Owing to these researches mainly, and following David Farrier, came Horsley, who added much to the knowledge already given by others in regard to brain localizations, especially as related to the motor centers; therefore the local symptoms, as well as the general symptoms, make it possible to do

operations upon the brain with almost as little hazard as to operate upon parts of the body visible to the naked eye.

The first American surgeons who wrote upon this subject and who operated for brain tumors were Hirshfield and Moore, of San Francisco. In 1886 they did several operations upon the brain and made elaborate reports of their results, which attracted attention throughout the whole civilized world. Formerly it was thought impossible to open the brain—to cut into the cerebral textures—and not cause instant death, but they showed that the brain might be opened, and if localization were practiced according to the rules laid down by other observers already mentioned, that brain tumors might be located below the surface of the brain and successfully removed. They became convinced of the great importance of brain localization in cases of tumor in the cerebral textures. Brain surgery has spread from that day to this, and there are few surgeons now of any note who are not willing to open the cranium and remove a tumor after it has been located by the processes referred to.

We have before us an instance of a cystic tumor of the cerebellum removed by one of our young surgeons who is destined to become great in his profession. I want to add tribute to his skill in this way. In this case localization was general as well as local, and, owing to it being general as well as local, he was able to locate this tumor and to successfully remove it by a surgical operation. The results, as you will see, are all that could be expected. Had he operated sooner, had the patient come under his observation before choked disc and optic neuritis supervened to the extent of destroying vision, this child to-day would be seeing, no doubt, instead of being subject to the unfortunate condition which he presents. But it is too late to speak of that now. Some one has stated that all the parts of the body are located in the brain; that each and every one of them has its special center except the umbilicus. The umbilicus seems to be the only part of the body that has been neglected, and some rising physician, surgeon, or neurologist, after further investigating the calvarium, will no doubt locate a center for the umbilicus.

The points of diagnosis given in the paper are clear, as proven by the results. It is necessary, however, to go a little further. While I agree with the essayist that pain is usually most intense over the site of the tumor in the majority of cases, yet this is not always true; and while I agree with him that this tumor may have pressed upon the

motor center; that it may have touched this center; that by contact or apposition it may have disturbed the motor center, yet it could not have been located in this center, otherwise we would have had paralysis of the muscles supplied from the motor center. This should not be lost sight of; neither should we lose sight of the fact that pain is not always most intense over the seat of the tumor. There may be present a tumor of the cerebellum, and yet pain may be located in the cerebrum. This has been noticed by all experienced surgeons.

It should be borne in mind that there are fallacies even in what the essayist has said; therefore I mention this by reason of the fact that in the calvarium there are nerves running from the cerebellum to the motor centers, from the cerebellum to the psychical centers, and to the sympathetic centers, to the centers of special sense, etc., which give us no manifestations when they are involved, unless the motor centers are also involved, other than simple anesthesia, hyperesthesia, paraesthesia, etc. These would be hardly sufficient in locating a tumor of the brain, but when we take into account the enormous array of symptoms present in tumors of the brain, we are not at all amazed. The brain being the great central ganglion, the great center or root of the nervous system, where we receive all impressions, where we transmit all messages and transact all business connected with the body, and also with the external world, it is no wonder that we should have a complex system referable to the brain. Therefore with one lobe connected with another, with one section of brain connected with another, with all communicating with each other at the same time, we must conclude that the brain is the most important structure of the entire body.

In this case we have had a tumor of the cerebellum; we have had perhaps fewer symptoms connected with this tumor than are usually observed, due to the fact that the central lobe of the cerebellum was not immediately invaded; that it was only partially invaded. As you know, the gray matter is in the center of the cerebellum, and not on the surface; so this tumor, being on the surface mainly, did not give rise to as many of the symptoms as are usually present in cerebellar tumors. The essayist has mentioned many of the prominent symptoms: nausea, staggering gait toward the left. Had this tumor invaded the central lobe, staggering would have been more to the right. It is not surprising, either, that the patient should have choked disc, because the radiating fibers from the optic tract go immediately beneath the seat of this tumor. One of the first symptoms of this disease is a con-

vulsion, and especially is this true when tumors invade the cerebellum or the base of the brain. The closer to the motor center the more likely are we to have convulsions as the initial stage, especially in children.

This tumor not being due to tubercle, sarcoma, glioma, carcinoma, gonococcus, syphilis, osteoma, nor fibroma, it is reasonable to suppose that the traumatism mentioned was the sole cause. This, however, the essayist did not determine until after his good work was done. Naturally in a child of this age we would expect the great majority of brain tumors to be due to either tuberculosis or sarcoma; it is not often we find fibromata in children of this age. But so far as I was able to learn from the essay, there was very little local disturbance in this case other than staggering gait, nausea, and vomiting; convulsions were absent, although convulsions are usually the first symptoms of cerebellar tumors. In many instances the patient dies in convulsions; this is the way in which people who suffer from tumors of the cerebellum usually die.

Touching the question of the operation: This is a little out of my line, nevertheless statistics go to show that about seven per cent of cases of tumors of the brain are operable, at least should be operated upon; that in individuals who have tumors of the brain located in the cerebral tissues, or which press upon nerves before their exit through the foramen of the skull, that after operations on tumors in such locations or in the ventricles, the patients usually live for a year or perhaps two. Unfortunately many of these cases recur. The case before us is one which is unlikely to recur. Therefore I mention it especially because the tumor was due to trauma; the cause has been removed, and there should be no return of the growth. It is not surprising that blindness should have resulted; this is what we would naturally expect from the location of the tumor.

This operation should redound to the credit of the surgeon who performed it; it should redound to the credit of any doctor who was able to make the diagnosis and perform the operation so successfully.

Dr. A. J. Boyd: About ten years ago a negro struck a white man on the head with a rock. Two years afterward the man began having headaches, with all the phenomena characteristic of epilepsy. He was brought to the Kentucky School of Medicine Hospital, and was operated upon by the professor of surgery about five years ago, the operator claiming that he found a cyst in the brain. The man came near dying

from the anesthetic, but was gotten off the table and put to bed as soon as possible. After he went home, for two years he had no return of the epilepsy, then he again began to have headaches, and is now in about the same condition as before the operation.

Dr. Dunn was present at the operation, and if he remembers the case I wish he would give us some further information concerning it.

Dr. M. F. Coomes: I think too much stress is laid upon diagnostic symptoms about the eye. When you have choked disc it is due to one of three things, viz., brain tumor, Bright's disease, or hemorrhage; differential diagnosis must be made between these three conditions.

I had a case of this kind some years ago which required a great deal of study. A man was brought to me with decided choked disc; there was a perception of light on one side, otherwise vision was entirely lost. The history was that he had received an injury some time before, from a rail which was on the shoulder of another person, who in turning struck him a sharp blow on the side of his head. The usual routine examination was gone through with, and diagnosis made of hemorrhage. The bowels were opened freely, and the bromides were given in large doses; the patient recovered perfect vision, but died two years later of brain softening.

A few thoughts occur to me in connection with the paper: One is the great number of deaths from operations where no brain tumor was found, and further, that an operator should make the mistake of operating upon such cases, as it is evidently a serious mistake in diagnosis that leads to operation on such cases. It does seem to me that with our present knowledge of localization, and even in a common-sense way, without any great knowledge of the detail anatomy, we should make a diagnosis accurately in cases of brain tumor.

For the control of hemorrhage in these cases, where the brain is extensively incised, I think we have a very potent agent in adrenalin, or extract of the suprarenal capsule. This is an agent which arrests hemorrhage very quickly.

There are some remarkable instances of brain tumors on record. The ophthalmoscope does not reveal as much in these cases as might be expected. Statistics show that choked disc does not occur as often as it might be supposed.

I was called to Indiana to make a diagnosis in a peculiar case. A man had been traveling around for five or six months with a small amount of headache. He was moody, bad tempered, and finally wound

up with what appeared to be an ordinary bilious attack. He was attended by an excellent physician, who treated him for that condition. He became more moody, and finally his intellect became blunted, and he began to lose vision rapidly.

I found him with marked choked disc and other evidence of a brain tumor. I was asked what the man's probable lease on life was, and told the consulting physicians that I did not know, but believed the man would not live long. He was dead in four days. Here was a man who had been practically on his feet until four days of his death, and it was not supposed that he was seriously ill. Patients with tumors of the brain sometimes go about without serious inconvenience up to within a few days of their death, although this is unusual.

I remember a remarkable case in a young man who had a cerebral tumor in the top part of the left hemisphere, fully as large as a small orange. That man had headache by spells; it was not continuous, and, strange to say, his vision was good almost until his death. He died in a convulsion, and post-mortem showed rupture of a large blood-vessel. In that case if the diagnosis had been made, I believe an operation could have been successfully performed and the man's life prolonged.

Dr. F. L. Koontz: In looking over the literature of the subject, two things struck me as being peculiar: First, that the majority of tumors of the brain occur in children under nineteen years of age. Second, the method in which these statistics had been obtained. Various estimates place the operable cases at a percentage of five to seven. The method of obtaining statistics was not entirely from operations; a great many of the cases were investigated post-mortem, and tumors found that could have been removed by operative intervention. With even six per cent of recoveries it illustrates that a great deal of good work might be done along this line, and these cases are usually hopeless without surgery, unless they are due to syphilis, when they may respond to the iodides.

Dr. J. B. Enright: This case emphasizes one thing that is becoming more and more a leading feature of medical instruction in medical schools of to-day, viz., the study of the anatomy and physiology of the central nervous system. In many cases where mistakes have been made in diagnosis, if more had been known about the anatomy of the brain probably these mistakes would not have been made.

In the case before us, the question is how much fluid in the lateral ventricle may be acting as a cause of this boy's defective vision. We

must remember that nowadays they aspirate the ventricles as well as inject fluid into the subarachnoid space. If there is any one thing that is well known, it is that the posterior as well as the anterior subarachnoid spaces communicate with the ventricles, that there is an interchange of fluids, and any interference with this interchange will manifest itself in some way. It may be in this case remnants of the growth which are present are pressing upon the fourth ventricle, hence the interchange of fluid is interfered with. I am of the opinion that the defective vision is due in great part to pressure that is exerted on the apex of the lateral ventricle.

Another fact must be borne in mind, the head is always filled with something; if not full of brains, it is full of fluid; if not full of fluid, it is full of blood. If you have a tumor in the cerebral cavity, it takes up space which should be occupied either by brain matter, by blood, or by rhachidean fluid.

Dr. Willmouth: There is one point in regard to the operation about which I wish to speak: That is, the question of drainage. I have seen quite a number of brain tumors removed, and in all cases trouble has been experienced with the drain. It is the custom to remove the drainage-tube or gauze in forty-eight to sixty hours. An important point in connection with the removal of brain tumors is to secure adequate drainage, otherwise you have a reaccumulation of the fluid in the space from which the growth was removed which gives almost as much trouble as the tumor itself. I remember seeing Dr. Cartledge remove a syphilitic gumma from the brain of a patient; the drain was removed in forty-eight hours, and pressure symptoms recurred, which necessitated another administration of chloroform to open the drainage tract.

Dr. W. B. Pusey: I remember having seen the patient shown by Dr. Dunn several times, and on May 1, 1900, I tested his vision for glasses. The ophthalmoscope showed 5 or 6 D. of astigmatism, axis 20—110 R. E. L. E. 5 or 6 D. axis 70—160; vision at that time, R. E. $\frac{1}{2} \frac{0}{0}$, L. E. $\frac{1}{2} \frac{5}{0}$. The high degree of astigmatism would account for the defective vision which the boy had at that time. Under atropine the vision was $\frac{8}{1} \frac{2}{0}$ in both eyes.

I made another examination later and found marked choked disc. The first time I saw him after the operation he had marked optic neuritis. He now has complete atrophy of both optic nerves. He has no optic neuritis now, as pressure has been removed, but there is com-

plete atrophy. Gowers says at least four fifths of the cases of brain tumors show optic neuritis. It would seem to me that the question is how quickly you can get hold of the patient and operate for removal of the brain tumor as to whether or not you can save the vision. Loss of vision is not due to optic neuritis *per se*; it is due to pressure which causes atrophy of the optic nerves. Loss of vision is never due to optic neuritis alone, unless it lasts long enough to cause loss of the nerve by atrophy.

Dr. John R. Wathen: Dr. Dunn certainly made a brilliant diagnosis in this case, and has been extremely successful in the application of his treatment. If we are to make a careful distinction between true tumors of the brain and other enlargements of this structure, as, for example, cysts which follow hemorrhage from trauma, tuberculosis, syphilis, etc., our statistics will have to be entirely rewritten. The conditions are not the same. This in the proper sense is not a tumor of the brain, but resulted from trauma and probably a hemorrhage, where an effusion was poured out, and what the operator drew off from the so-called cyst was really the remnants of a hemorrhage.

In regard to tuberculosis, syphilis, and sarcoma of the brain: It is remarkable that we should have so many of these conditions in the brain, when it is remembered that the mass of the brain is not connective tissue, but of epiblastic origin. The only mesoblastic structures from which any of these three conditions just named could possibly arise would be the blood-vessels of the brain, the pia mater with a few prolongations of this same structure into the brain.

In regard to the advisability of aspirating these cysts: True cysts of the brain have a tendency to recur unless you destroy the lining membrane of the cyst. Typical cysts never get well. Cysts that get well by aspiration are only those cases following trauma, where we had hemorrhage into the brain structure, and serum is left there which is not absorbed. We know that the brain does not absorb serum readily.

In this connection I would like to refer to a case I heard of this summer. In returning from the East I met Dr. Batterson, of Ohio, who had just returned from Dr. Roswell Park's infirmary. They had operated upon a similar case to the one reported by Dr. Dunn to-night. A boy, twelve years of age, had fallen, striking the back of his head against the curbstone. He became unconscious at the time, and this was followed by headaches. Later, in a few weeks, he developed insanity, with pronounced epileptic seizures. He was operated upon

about a year afterward by Roswell Park, the location of the incision being about where Dr. Dunn opened the skull in the case reported to-night, and nothing was found. Dr. Park expected to find a cyst from the trauma the boy sustained. But by relieving pressure upon the brain he hoped to accomplish something. A few days later the boy began to improve, his insanity gradually disappeared, he recognized his friends, the epileptic attacks ceased, and when I last heard of the case he was on the road to rapid recovery.

Dr. J. T. Dunn: I appreciate the very general and generous way in which the paper has been discussed. Dr. Boyd asked in regard to a trephining operation performed in the Kentucky School of Medicine Hospital five years ago. I remember having assisted in the operation, and the professor of surgery declared that he found a cyst, but I did not see it. There was a marked depression on the under surface of the button of bone which was removed, but as for a cyst or the general condition of the brain itself, I saw very little that appeared to be abnormal unless it was a thickening of the dura mater at that point. He says that the man was improved for two years, at the end of which time the epileptic convulsions recurred. This was one of the cases in which it is probable simple incision of the scalp would have relieved the patient just as well as removal of a button from the skull in order to overcome a supposed pressure of the brain substance itself. Not infrequently cases are encountered where there has been marked injury to the scalp, where simple incision of the soft parts and breaking up the adhesions between the scalp and underlying bone will relieve the epileptic condition. It has been thought that the local point of irritation was in the adhesions between the scalp and the bone, just as Dr. Irwin believes, in the case he reported, that the local point of irritation is in the cicatrix from an operation for appendicitis.

There is one symptom which I did not mention in my report, that I notice is spoken of by a few authors, and that is the "cracked-pot" sound. On percussion in this case I could get a decided cracked-pot sound; the sutures were all loose, and this peculiar sound was distinct. Since the operation, only a week ago, in percussing the boy's head the same sound could be detected.

JOHN R. WATHEN, M. D., *Secretary.*

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, November 5, 1901, the President, Ewing Marshall, M. D., in the Chair.

Case of Meningitis. Dr. T. P. Satterwhite: The following case is reported more for the purpose of asking some information in regard to the diagnosis than any thing else.

A few days ago I was called to see a child, eight or nine years of age, a very healthy-looking, robust German boy. I have known and practiced in the family for many years. The boy went to bed one night feeling perfectly well, so far as the parents could state. I was summoned about nine o'clock next morning to come around as quickly as I could, as the child appeared very ill, but I did not reach the house until half past ten o'clock A. M. When I arrived, I found the child lying in a state of semi-stupor; the mother said, "I doubt very much whether he knows me or not"; and his respiration was very rapid. The mother said when she telephoned to me the child was blue; there was no cyanosis at the time I saw him; his lips were of good color; that is, they were not cyanotic, nor bluish in color; circulation in the finger nails apparently good.

I examined this boy's throat, and on one side there was a patch, such as we often see in tonsillitis, and the throat had a reddish appearance, not an intense bluish red, and his respiration was probably sixty to the minute.

I thought it was a case of diphtheria, and immediately sent for Dr. Cashin to make a culture. He did so, and I asked him to let me know at the earliest possible moment the result of his investigations, which, he said, would be at eight o'clock the next morning, which he did, and he said the culture showed diphtheria bacilli.

I was again hurriedly summoned about two o'clock the same day, and found that the child's respiration was somewhat accelerated, but there was no cyanosis. The boy was unconscious, although his eyes were open, and he was apparently looking around. His lips did not indicate any blueness.

I immediately telephoned for Dr. Cheatham, who came at once and introduced an intubation tube; he remarked at the time that the child could not last long with as rapid breathing as was present. The patient would toss from one side of the bed to the other, throw up his hands as if trying to get his breath, as we all thought. A singular part of the

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

case was that the child was unconscious, not recognizing his mother or anybody else; expression of the eyes bright, pulse very rapid, I suppose 150 to 160 to the minute. The dyspnea was not in any sense relieved after intubation had been practiced. I then sent to Henry's pharmacy by messenger for some diphtheritic antitoxin, and immediately administered 3,000 units.

I made another visit five hours later, and found the pulse much weaker and faster, and restlessness increased very markedly. It was apparent to all that the child did not recognize anybody. I waited until nine hours after the first antitoxin had been given, recognizing that it was a desperate case and that nothing that had been given was doing any good, and then administered a second dose of antitoxin. I stated to the parents that I did not believe the boy would live through the night. He died at half past eleven o'clock, a little over twelve hours from the time he was first taken sick. Dr. Cheatham said it was unquestionably a malignant case of diphtheria. A peculiar part of the case is that the child was practically unconscious from the time he was stricken, or the time when the parents first noticed that he was sick. The bowels and kidneys had acted in the morning, but the bladder was not examined after I took charge of the case. The temperature was $104\frac{1}{2}^{\circ}$ F. I am a little uncertain yet whether it was a pure case of diphtheria or not.

I received a report from Dr. Cashin in due time that he had found the diphtheria germs in the specimens examined. There was no opisthotonus, though I was told that just before death the child had a convulsion.

As stated at the outset, my reason for reporting this case is that I am uncertain as to the diagnosis. As soon as I made my evening visit I sent for some oxygen gas, thinking if it was for the want of oxygen from some obstruction that oxygen gas would bring about some measure of relief, which it did not.

Discussion. Dr. M. F. Coomes: To my mind this is a clear case of fulminating cerebral meningitis. There was such a case in my neighborhood a short time ago. A boy, aged sixteen years, got up one morning and said to his mother that he did not feel very well, and she remarked that he had better lie down again. He went back to bed and immediately became unconscious, and the family physician was sent for. The case ran about such a course as that described by Dr. Satter-

white; breathing became very rapid, showing that there was irritation of the brain involving the breathing-center, followed by pressure. This boy was dead inside of six hours.

In the case reported, the rapid breathing was due to pressure upon the breathing-center, first causing irritation and rapid breathing but in the end slower breathing and death, and not the result of any obstruction. The rise in temperature may or may not have had any thing to do with the result. It was most certainly not a case of diphtheria; cases of diphtheria last longer and do not die in the way described. The little spot in the throat was probably co-incidental.

Dr. W. F. Boggess: I agree fully with what Dr. Coomes has said. I do not see how it could have been any thing else but a fulminating and rapid form of meningitis. I saw two cases during the last year that died within twenty-four hours with meningitis, one a child, the other a robust adult. The latter patient had a temperature in the afternoon of 104° F., rapidly sank into a comatose condition, and died at 11 o'clock that night. He had unmistakable evidences of an acute, fulminating, rapid effusion into the base of the brain. In these cases there is rapid breathing, but generally no cyanosis and no difficult breathing.

The mere fact that Dr. Cashin found the germ of diphtheria in this case does not militate against its being meningitis, because any of the violent infections are perfectly capable of producing this disease. Pneumonia, typhoid fever, diphtheria, and other infections sometimes lead to meningitis. I have seen two cases of meningitis following typhoid fever, in which the typhoid germ has been found in the effusion in the meninges. Meningitis has been known to follow the grippe in several instances.

Dr. J. M. Krim: I fully agree with what has been said by Drs. Coomes and Boggess. I recently saw a case with a similar history, in which there was no meningeal trouble. A child was taken sick, and while there were no signs of diphtheria, so far as could be seen, in the throat, yet the child had labored breathing, respiration probably 60 to the minute, temperature 103° F. The following day I was called in to see the patient with the family physician, Dr. Rominger. The child became cyanotic that night, and had reacted by the next morning, but was in a semi-comatose condition when I saw it, breathing labored, temperature 104.5° F., and had not passed a drop of urine since 8 o'clock the previous morning. With a catheter I withdrew half an ounce of urine, which was found loaded with albumen, and it also contained some casts. The child complained of intense pain, rolled itself

from side to side constantly, and could not be kept quiet except under the influence of some narcotic. Antitoxin was administered that day about noon; the child improved under the antitoxin, but a cyanotic condition came on that night, and it did not pass any more urine during that day or night, notwithstanding use of the sweating process, diaphoretics, diuretics, etc. The next day the child was somewhat better, and, strange to say, it finally made a complete recovery.

P. F. BARBOUR, M. D., *Secretary.*

NEW YORK ACADEMY OF MEDICINE—SECTION ON ORTHOPEDIC SURGERY.

Meeting of November 15, 1901. George R. Elliott, M. D., Chairman.

Dr. Homer Gibney read a paper on the "Orthopedic Operations for Intractable Cerebro-spinal Lesions," and reported two cases recently operated on in which marked improvement in locomotion was noticed. The two cases reported were Friedreich's ataxia. The inco-ordination of the lower extremities was, in a measure, overcome by tenotomies and fasciotomy for correction of the existing pes cavus and trigger toe. He insisted on first correcting the deformity, and then, with properly adjusted apparatus worn for a long time, claimed marked benefit, and in many cases complete removal of the interference incident to the paralysis.

Dr. Henry Ling Taylor said he agreed with Dr. Gibney in regard to the great value of operative procedures in properly-selected cases of paralytic deformity, particularly in children. While it was true that operations designed to remove deformity or restore stability to a helpless limb not infrequently resulted in disappointment, owing to imperfect mechanical treatment afterward, it was no less true that mechanical treatment was often imperfect or unduly prolonged by the failure to grasp the indications for operating.

Dr. John McG. Woodbury said he could not discuss the paper, as he came late and did not hear it, but expressed the opinion that chiefly operative procedures held out any possibility of recovery or permanent improvement; non-operative measures alone were simply palliative.

Dr. George R. Elliott said the field referred to was a large one, and many a cripple was bed-ridden or going about with contractures and post-paralytic deformities that could and ought to be relieved. He cited as an example a patient upon whom he had recently operated who had been bed-ridden for three years owing to post-typhoidal con-

tractures of spinal origin. By proper tenotomies, manipulation, and subsequent use of apparatus, the girl was now walking quite as well as ever.

Dr. Henry Ling Taylor read a paper entitled, "The Effect of Osteitis of the Knee on the Growth of the Limb." From measurements of the femoræ, tibiæ, feet, and patella during or after osteitis of the knee in forty cases where the disease had begun in childhood, the following conclusions were reached:

1. The affected limb, if approximately straight, was longer in the first four years in the large majority of cases. In observed cases of adolescents and adults it was from one to several inches shorter when the disease had lasted over seven years.

2. The affected femur was nearly always longer in the first four years, and the lengthening of the limb mainly due to lengthening of the femur. In the older cases, after a duration of seven years or more, the femur was markedly shortened.

3. The tibiæ were usually equal in length in the early stages; later the tibia of the affected side might be slightly longer for a time, but oftener shorter. The shortening increased considerably in the older cases and after the subsidence of inflammation.

4. With limbs of equal length and a duration of several years the femur of the affected side was found longer and the tibia shorter than its mate.

5. The foot and patella showed a difference in favor of the sound side after one year, and frequently before.

6. The stimulation of growth in the affected femur was accompanied by a retardation in the tibia, foot, and other parts; growth in the femur itself was finally retarded. The result after many years was often considerable shortening of the limb.

Dr. T. Halsted Myers said that his observations were almost identical with those given by the reader of the paper. In fifteen cases observed by him the lengthening was generally in the femur, and in some cases the femur lengthened while the tibia shortened; in others both bones were lengthened. This occurred during the active stages of the disease, but he could not speak positively as to the ultimate result. He thought it probable that if the knee recovered with good motion there was less shortening, and wished to ask Dr. Taylor whether he noticed that limbs left with stiff joints shortened more than the others? The proper functioning of the joint after the cure of the disease was a most important element in securing the best nutrition and development of the limb.

Dr. H. A. Parish stated that there was no doubt about ultimate shortening in the majority of cases. He cited, however, the case of a girl, aged sixteen years, disease of thirteen years' duration, remarkable for great lengthening during the active stage of the disease. After a partial excision ten years ago, and recently a supra-condylar osteotomy of the femur and a cuneiform section of the tibia for the relief of flexion deformity, there existed only three eighths of an inch shortening, with limb at angle of 175 degrees.

Dr. V. P. Gibney said that years ago Dr. Berry had called attention to the subject of the reader's paper, and from examination of fifty cases had found the femur had grown in length. In his own practice he had been disappointed not to find lengthening. While lengthening was generally believed to be the rule, it could be readily understood how shortening might occur from interference with the nerve-supply by pressure of the head of the tibia on the popliteal space. He referred to a patient seen ten years ago, who had an inch and a half lengthening after a long course of protection treatment. The girl was still young and the joint disease cured; she was allowed to use the limb freely, and atrophy set in. At the same time the joint of the healthy limb was protected, and after four or five years the normal femur lengthened and the diseased one shortened, so that one fourth inch difference was the final result.

Dr. Taylor, referring to Dr. Myers' question, said that lengthening of the femur was the rule while the disease was active, and it was probable that more shortening occurred in the deformed and badly managed cases. In the latter the final result would usually be considerable shortening in adult life. He referred to the work of Leusden, who took measurements of radiograms and reached conclusions nearly identical with his, except that Leusden had no opportunity to study adult cases where the disease had begun in childhood.

Dr. V. P. Gibney asked Dr. Taylor how he accounted for the shortening in neglected cases. Dr. Taylor replied that he considered it due to retarded growth.

Dr. V. P. Gibney said he was at a loss to understand why the bones shortened, and would be glad to look over the statistics presented by Dr. Taylor. He supposed Dr. Berry's cases would be called neglected cases.

Dr. Taylor said that his statistics, in the majority of instances, were not made from neglected cases, though it was probable that most of the adult cases might be called neglected.

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WHAT SHALL WE DO WITH OUR CONSUMPTIVES IN WINTER?

There is no more important question for consideration by the medical man to-day than what he shall do with his consumptive patients in winter. Of course, it is understood that those who are *in extremis* are better off at home under ordinary circumstances than they would be anywhere else, as there is no hope of recovery and but little hope of prolonging life for any length of time.

But there is that large class of consumptives whose throats are in a fair condition—that is, they have no open sores as the result of breaking down of the tuberculous deposit. They may be hoarse from congestion of the cords or infiltration in the surrounding tissues, and especially the epiglottis, but so long as there is no open surface in the tissue about the larynx, and so long as the epiglottis is not excessively infiltrated, the patient may be considered in a fair condition so far as the throat is concerned. It matters not how much they are expectorating and how much they are debilitated, so long as they are on their feet with the tissues of the larynx closed up, they will be far better in an equable, dry, sunny climate with moderate altitude than it is possible for them to be anywhere around in the Mississippi or Missouri valleys. These people should be instructed in the early stage of the disease

as to its dangerous character and as to the possibilities of arresting it by the selection of a proper climate. If there is any one fact established concerning the treatment of pulmonary tuberculosis, it is that climate is of more value than all the drugs that can be administered. The fact of the matter is, but few people survive any great length of time in our climate who have tuberculosis after the breaking down of the lung tissue begins, as they are doomed to an early demise if they remain here—hence the duty of the physician is plain and simple. He should freely and frankly tell his patient what his condition is and what will be best for him. It might be said that what is best is not known. We deny this. As we have said before, it is absolutely and positively certain that proper climate is the best remedy for him to avail himself of—hence there should be no hesitation about advising the consumptive patient to seek a suitable climate.

Some physicians may be avaricious enough to hesitate about sending a patient away for fear of losing a fee. Such an individual had better quit the practice of medicine, as no man has any right whatever to rob a fellow-being even of a prospective hour of life. We frequently see cases that might be much benefited by timely advice as to the seeking of proper climate, but, either through ignorance or selfishness, or possibly we had better say avariciousness, the doctor has kept them at home.

As to climate, there can be no question but what the southeastern side of the Blue Ridge Mountains is one of the most desirable climates in the world for consumptives. The elevation is moderate—the most desirable climate for all-year-round homes; the pure atmosphere, the moderate elevation, the absence of extremes in temperature, and the eternal sunshine make this territory valuable for consumptives. Take Asheville as center. It is easily accessible, can be reached from any portion of the Mississippi and Missouri valleys in from sixteen to twenty-four hours. The through service from Chicago and St. Louis, via the Southern Railway, makes it possible for the patient to have the most rapid and pleasant transportation—hence we unhesitatingly say a mistake can not be made in recommending any consumptive to go to this climate.

It is worthy of note that none of the fatalities resulting from tetanus following vaccination in the United States resulted from virus manufactured by Parke, Davis & Co.

Current Surgical and Medical Selections.

THE American Electro-Therapeutic Association will hold its twelfth annual meeting at the Kaaterskill, Catskill Mountains, N. Y., on Tuesday, Wednesday, and Thursday, September 2, 3, and 4, 1902. The officers are: President, Dr. Fred H. Morse, Melrose, Mass.; Secretary, Dr. George E. Bill, Harrisburg, Pa.; Treasurer, Dr. R. J. Nunn, Savannah, Ga.

FOUR HUNDRED DOLLAR PRIZE.—Dr. J. B. Mattison, Medical Director of Brooklyn Home for Narcotic Inebriates, offers a prize of \$400 for the best paper on the subject, "Does the Habitual Subdermic Use of Morphia Cause Organic Disease? If so, What?" Contest to be open two years from December 1, 1901, to any physician, in any language, award to be determined by a committee composed of Dr. T. D. Crothers, Hartford, Conn., editor *Journal of Inebriety*, Chairman; Dr. J. M. Van Cott, Professor of Pathology, Long Island College Hospital, Brooklyn; and Dr. Wharton Sinkler, Neurologist to the State Asylum for the Chronic Insane, Philadelphia. All papers to be in the hands of the Chairman by or before December 1, 1903, to become the property of the American Association for the Study and Cure of Inebriety, and to be published in such journals as the committee may select.

A DISCUSSION ON THE NATURAL HISTORY OF FIBROIDS AND RECENT IMPROVEMENTS IN THEIR TREATMENT.—(British Medical Journal.) Alban Doran, in opening the discussion, considered the following questions: 1. The natural history of uterine fibroid. It is not a fibroma. It is always more or less a myoma, consisting of muscular fiber like the uterus, and while nobody would think of treating a fibroma with internal medication, it is a fact that ergot acts to some extent on the myomatous tissue as it does on the uterine muscle. It may, therefore, be very beneficial, but these forms are not rarely associated with cardiac disease, and then ergot is contraindicated. A more important practical point is the relation of the ovaries to fibroid disease. While no definite changes have been detected in the ovaries, the experience of a formerly popular operation shows that the removal in certain cases reduces the fibroid or checks the bleeding. The results, however, are not uniform, but are of some interest to us as bearing on the question whether the ovaries should be left in cases of hysterectomy for this cause. 2. We are not quite clear as to the nature of the hemorrhagic discharge in fibroid disease. 3. One of the most puzzling questions is in regard to their growth. The prognosis on this point is extremely difficult. Undoubtedly spontaneous disappearance may occur or the tumor may at least remain stationary, while all other pelvic and abdominal tumors are clinically, if not also pathologically, malignant. The influence of the

menopause is also of importance. It is generally believed that a fibroid ceases to grow after the change of life, but Kleinwächter finds from extensive clinical evidence that this is not absolutely true. It seems clear, however, that the menopause is apt to be retarded often until after the fiftieth year in subjects with fibroids. The majority give no trouble after the menopause; only a minority require further attention. The second subject which he discusses is the recent improvements in the treatment. He asks first if there are any recent improvements in expectant treatment. We have advocates of electricity and the bromides, and he asks the opinion in regard to this matter. The majority of fibroids require no operative treatment, but where this is not so he discusses the various methods. Retroperitoneal hysterectomy is the most popular method in Great Britain at the present time, and he concludes with some remarks in regard to its merits and details. He objects to leaving intraperitoneal ligatures or sutures connected with the stump, and finds it best to unite the cut edges of the peritoneal flaps with a continuous Lembert suture of fine silk. As regards the leaving of ovaries, he thinks it does not entail very formidable results, and thinks the dread of removing the ovaries is a fashion, though on surgical grounds he saves them if possible, not through fear of the consequences, but because the surgeon should remove only what is absolutely demanded. He thinks that retroperitoneal hysterectomy is the best of recent improvements in the radical treatment of uterine fibroids. Panhysterectomy entails more danger at the time of operation, and the ligatures can not be dispensed with.—*Journal American Medical Association.*

LARGE DOSES OF DIGITALIS IN THE TREATMENT OF ACUTE ALCOHOLISM.—H. P. Loomis (Medical News) concludes as follows:

(1) The indiscriminate use of large doses (half an ounce of tincture) of digitalis in acute alcoholism is fraught with danger.

(2) The cases in which it should be given are the strong, robust patients in early life, suffering from no complication, and with violent delirium. In these cases the result, I believe, will be exceptionally favorable. They become quiet, go to sleep with a certainty and promptness that is not obtained by any other method with which I am familiar.

(3) If after three doses no narcotic effect is noticed, I would not advise a continuance of the remedy. I believe in the above cases it can be used with perfect safety for a limited number of doses.

(4) The failures in my cases were in chronic alcoholic subjects in middle and advanced life, and in anemic individuals with bad nutrition.

(5) One fact noted in the cases which showed marked results from the treatment was that when they recovered and awoke from their sleep they were in such good condition that they were able to leave the hospital at once. This is an unusual experience, as ordinarily convalescence is delayed for two or three days.—*The Chicago Clinic.*

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

A RESUME OF THE SURGICAL TREATMENT OF TUBERCULOSIS OF THE PERITONEUM, INTESTINES, AND GENITO- URINARY ORGANS.*

BY WILLIAM H. WATHEN, A. M., M. D., LL. D.

Professor of Obstetrics, Abdominal Surgery, and Gynecology in the Kentucky School of Medicine; Fellow of the American Gynecological Society; Gynecologist to the Kentucky School of Medicine Hospital and the Louisville City Hospital, etc., Louisville, Ky.

Tuberculosis of the peritoneum and the retro- or extra-peritoneal organs has of recent years been extensively considered in relation to the application of surgical treatment in efforts to cure these conditions, and also because of the further fact that the nearly generally accepted opinion of the curative value of laparotomy, or other capital surgical operations, has been denied by several distinguished surgeons, including Borchgrevink and Christian Fenger, in their opposition to laparotomy in tubercular peritonitis.

We might divide the subject of tubercular peritonitis as to stages in history into three, and possibly into four, periods. The first antedates 1825, when the disease was almost unknown and seldom diagnosticated; the second, from 1825 to 1884, when the disease became better known and diagnosis more frequently made, but surgical treatment unknown; the third, from 1884, when König reported his four laparotomies for the cure of tubercular peritonitis, until recently, and the beginning of the last or fourth period, since the denial of the benefit of laparotomy in the treatment of this disease. Prior to 1884 the disease was considered

* Read before the Louisville Clinical Society. For discussion see page 68.

practically incurable, and by many distinguished authors as malignant as cancer. Since this time we have been taught to believe that great relief to suffering and prolongation of life has resulted from laparotomy, there being practically no immediate mortality, with from seventy to eighty per cent of patients at first apparently cured, and finally twenty-five to thirty per cent permanently cured.

Tubercular peritonitis is probably more frequent than is generally believed, there being, in 4,250 autopsies, 1,393 tubercular cases, 226 of which were tubercular peritonitis, or about sixteen per cent of all cases dying of tubercular disease. The disease is usually secondary to involvement in other parts of the body, and in the 226 cases there appears to have been but two cases positively primary.

While tubercular peritonitis is seldom seen in children under two years of age, it is more frequent in young persons, and is seldom found in old age. In the 357 cases collected by Osler two thirds were between the ages of two and forty years. Authors have differed greatly in regard to the relative frequency in the male and female, but from all statistics at our disposal we may say that it appears about as frequently in one sex as in the other. While authors do not entirely agree in classifying the varieties of the disease, we may, however, adopt the following classifications: First, the disseminated miliary form over the entire peritoneum; second, the lymphogenous form; third, the exudative form; fourth, the adhesive or fibrous form. But, from a clinical view, we may recognize the following three forms: First, the ulcerative or suppurative form; second, the serus exudative form; third, the adhesive form.

Previous to 1884 medicinal treatment was not believed to possess much value as a curative means. Just how and why laparotomy cures tubercular peritonitis is not known, and there are so many diverse and conflicting reasons given by the most experienced surgeons that it is a waste of time to discuss that part of the subject; the question for us to decide being, not how laparotomy accomplishes the result, but, does it accomplish the result?

I hardly see how it is possible to sustain the argument that laparotomy does not cure some cases of peritoneal tuberculosis from the limited observations of those who have presented the only facts in favor of this belief. While we can reconcile the fact that there should be many conflicting explanations as to why and how laparotomy cures tubercular peritonitis, we can not logically concede that the surgical world has been for fifteen years deceived in the benefits derived from surgery. No

one can gainsay the fact that many of these patients are symptomatically cured or greatly benefited following laparotomy, and the only argument that can logically be offered is as to the permanent cure, and whether there would finally be as many cured by careful hygienic, sanitary, and medicinal treatment as there would be by the same treatment plus a laparotomy in properly selected cases.

It has been shown in many instances, not only from the history of the cases and very careful physical examinations, that patients have been permanently cured of tubercular peritonitis by laparotomy, but also by post-mortems upon patients who were previously operated upon for this trouble, no vestige of the disease being found, the peritoneum having regained its normal condition.

It will require a far more extended experience and observation to destroy the belief in the good results derived from surgery, and we may be assured that the medical profession will not in the near future consent to withhold from patients suffering with certain forms of tubercular peritonitis the benefits to be derived from laparotomy, that the experience of many years has taught us to believe so frequently result from this method of treatment; the immediate mortality being practically *nil*, septicemia seldom resulting, and secondary infection of incised structures never resulting.

There is nearly a consensus of opinion that laparotomy is not indicated during the earlier stages of the disease, but again, if we delay too long, until there is extensive ascites or the peritoneal structures of the bowel, the omentum, the mesentery and general peritoneum are greatly thickened, or universal adhesions have formed, practically closing the peritoneal cavity, or numerous sacculated accumulations of pus have formed, we may have delayed too long to offer our patients the best results—the happy medium being the correct solution.

From all statistics upon this subject we feel justified in the belief that the main benefit is the result of the abdominal incision and exposure to air, those patients further treated by saline or any form of medicated irrigation, or application of iodoform or other so-called remedial agents, not having derived any additional relief because of such methods.

An argument against the value of surgical treatment is that most of these cases have tuberculosis in some other structure of the body, the peritoneal involvement being generally secondary.

In answer to this, we may assert that authors differ about the relative frequency of the involvement of other structures preceding peritoneal

infection, and also that the involvement of other structures, whether antedating or following peritoneal involvement, often disappears with the disappearance of the tubercular peritonitis. Of course no one should operate with extensive chronic involvement of other organs which can not be surgically treated or otherwise benefited.

From the foregoing, it might be concluded that draining the peritoneal cavity by a vaginal incision through Douglas' pouch would accomplish results equal to the abdominal incision, but experience has proven this to be false ; and while in many operations nothing has been done but make an abdominal incision, it is better to sponge the cavity dry and gently cause irritation of the diseased areas, and where adhesions can be separated without danger of rupturing the intestines this should be done, and large portions of diseased omentum may be removed.

In removing masses of caseous matter, or purulent accumulations, great care must be exercised to prevent causing injury to the intestine, otherwise we may have one or several fecal fistulæ.

There being no consensus of opinion as to the channels of peritoneal infection, we are justified in the belief that the bacilli may reach the peritoneum in a systemic way, through either the lymphatics or veins, or by continuity of structure, where the tubercular peritonitis is antedated by tuberculosis of the intestines, kidneys, ureters, bladder, prostate or genital structures, the uterus, fallopian tubes, ovaries, vasa deferentia, or vesicula seminalis. In this connection it is proper to call attention to the treatment of some of these structures with or without peritoneal infection, for the recent results of surgical treatment in tubercular disease of these organs through the abdominal route has demonstrated not only the feasibility of such operations but the immediate and subsequent permanent beneficial results.

One of the most frequent complications of tubercular peritonitis is tubercular disease of the intestines, the surgical treatment of which is even more modern than that of tubercular peritonitis. While Senn reports excellent results, and claims excellent results in the practice of others in cases of this kind, by abdominal section and thorough iodoformization of the diseased parts by ten-per-cent iodoform-glycerine emulsion, or by further injection of this emulsion from every two to six weeks, I do not believe the medicated part of the treatment will finally be accepted as of any decided benefit. As there are but few organs or structures of the body infected with localized tuberculosis that have not been treated surgically, to remove or limit the further extension of the disease, we are

justified—from the even limited experience in surgical treatment of the intestines for this trouble—in giving the matter a more extended trial, for many successful operations have been reported. Medicinal treatment in such cases has been of no practical benefit, and the surgical treatment only dates back a few years, the number of cases being small and the operations usually limited to localized primary infection, for diffuse primary intestinal tuberculosis is still a *noli-metangere*. The operation is contraindicated where there is extensive involvement of other parts of the body, or where the system is in a condition unfavorable for a prolonged or tedious operation.

While intestinal tuberculosis is infrequent as a primary affection, it is relatively frequent as a complication of tuberculosis of other organs, there being in one thousand post-mortems of tubercular cases five hundred and sixty-six cases of secondary involvement of the intestines and only one case of primary infection; but Wyss, in seventy-one post-mortems of tubercular patients, found three cases of primary intestinal tuberculosis. The relative frequency in youth, middle, and old age is about the same as in tubercular peritonitis.

Primary intestinal tuberculosis must necessarily reach the bowel by swallowing the germs, and while Koch claims that tuberculosis from cattle can not be communicated to man, it is believed by many authorities that the primary disease of the intestine usually results from the use of milk and meat from animals infected with tuberculosis.

Malin, Parrott, and Bonley caused intestinal tuberculosis in animals by feeding them with expectorations from tuberculous people, and Chauveau, Bollinger, and others caused the disease in animals by feeding them with tubercular lung-tissue and raw tubercular meat. Gerlach, Zürn, and Klebs claim to have caused the disease by feeding animals with the milk of tubercular cows. In these cases the disease appears to have begun as a tubercular intestinal catarrh, and extended through the mesenteric glands before causing diffuse miliary tuberculosis. It is possible for tubercular ulceration of the intestine to heal after causing tubercular lymphadenitis, a systemic involvement then resulting from the latter condition and causing death. Stenosis of the intestine often follows tubercular ulceration because of the slow-healing process, which involves much connecting tissue; this not being true in the ulcers of typhoid fever, which heal so rapidly that normal tissue is practically restored without contraction.

Early infection of the mesenteric glands is common in children, while in adults secondary infection of the intestines is more frequent.

The first involvement of the bowel is frequently at the ileo-cecal union, but any part of, or the entire intestine, may become infected. Chronic catarrhal and ulcerated tuberculosis are forms presented, both clinically and pathologically, modified by pathologic processes common to all tubercular infections, being influenced by the environments or structure and function of involved tissues. The glandular structures—the lymphatic follicles and Peyer's agminated glands—are first infected, the method resembling the infection of typhoid fever.

The literature of the subject would now indicate that the ileo-cecal junction and colon are relatively more frequently involved in the adult, and that there are two anatomico-pathologic forms—a fibroid and an ulcerative variety—which may be combined, or there may be many modified stages; but the majority reported show extensive tissue-proliferation, which causes a condition resembling carcinoma. In some cases the infection is primary in the appendix.

While it is not my purpose to discuss the symptoms or the diagnosis of intestinal tuberculosis, I would suggest that the diagnosis of this disease is more positive than the diagnosis of tubercular peritonitis, because we may find the bacilli of tuberculosis in the feces.

In stenosis following intestinal tuberculosis the bowel has been treated by physiologic exclusion, by performing an anastomosis between the healthy bowel at each end of the stricture; by complete exclusion, excising the bowel at each side of the stricture and uniting the ends by circular suturing, then closing the ends of the strictured portion and leaving it *in situ*. The first method has been followed by excellent results, the bowel freeing itself of fecal matter and gradually contracting, but the latter has not resulted so favorably, and a subsequent operation was required. In one instance, where the dissected part was very extensive, the open ends of the strictured part were sutured in the upper and lower ends of the abdominal incision, the patient recovering. At a subsequent operation the diseased portion was successfully removed. Where the tuberculosis still existed, with or without stenosis of the bowel, the usual methods have been to resect the bowel and perform an end-to-end or a lateral anastomosis—sometimes performing ileo-colostomy; again, ileo-ileoostomy, or ileo-sigmoidostomy. Where the constriction was not extensive, and confined mainly to one side of the intestine, it has been relieved by an enteroplasty, such as devised by Heineke-Mikulichz for pyloric stenosis, the incision being made longitudinally upon the convex surface of the bowel and sutured transversely. Nové-Josserand per-

formed a laparotomy upon a child twelve years old for tubercular disease involving the cecum, colon, and ilium, removing none of these structures but wiping them thoroughly with iodoform gauze. The patient is reported to have made a complete recovery.

Enterectomy and circular suturing are the most radical of all the methods, and should not be done unless the patient is in an excellent general condition. If the mesenteric glands adjacent to the infected bowel are involved they should be included in the intestinal resection, but diffuse glandular tuberculosis in these cases is beyond surgical skill. Resection has been frequently performed in the ileo-cecal region, but other parts of the intestine may also be removed. The following cases of resection have been recorded :

Dr. Rudolph Matas did a successful enterectomy for constriction in the upper part of the jejunum, caused by healing of a tuberculous ulcer. König reports five cases of stricture caused by tubercular ulceration, all treated by resection and circular enterorrhaphy. Treves reports one successful case of resection for tubercular stenosis, uniting the ends of the bowel by the Murphy button. Sacks reports one case of successful resection by circular enterorrhaphy for ileo-cecal contraction. He also collected thirteen cases of resection of the ileo-cecal portion for tuberculosis, with eleven recoveries.

Fage-Hansen, of Denmark, successfully removed six inches of the ileum and cecum and four inches of the ascending colon, suturing the ileum to the colon, having divided the ileum obliquely so as to give a larger circumference to facilitate the circular suturing of the ileum to the colon.

Czerny resected the ileo-cecal portion in five cases, with three recoveries and two deaths. Rentier resected the cecum and united the ends by the Murphy button, but the patient died on the sixth day. In post-mortem the lumen of the button was found completely obstructed by hardened feces.

Caminiti-Vinci successfully resected thirty centimeters of intestine with its mesentery and glands, and ten centimeters of thickened adherent omentum.

Broca successfully resected the cecum, uniting the ends by circular enterorrhaphy.

Durante resected the cecum five times with four recoveries. Emil Müller in two cases resected the lower part of the ileum and cecum and the ascending colon to within one inch of right colic flexure, performing circular enterorrhaphy, with one recovery.

Senn successfully resected the cecum and eighteen inches of the ileum with its mesentery, performing lateral anastomosis, using decalcified bone plates.

The extent of bowel that may be finally successfully removed is demonstrated by the case reported by Körte. He first resected in August, 1901, the cecum and ascending colon nearly to the right colic flexure, and, not finding healthy tissue, established an artificial anus. In November, 1891, he resected twenty-one centimeters of colon, invaginated and sutured the cut end, and performed an anastomosis between the colon and lower part of the ileum, a fecal fistula resulting. In May, 1893, he performed an ileo-sigmoidostomy, a fecal fistula again resulting. On July 3, 1893, he occluded both ends of the remaining portion of the colon, regular evacuations from the rectum following. On July 23d he resected the excluded colon. While the fecal discharge from the fistula was always liquid, that which came through the remaining portion of the colon and rectum was natural.

While tubercular fallopian tubes or ovaries, associated with tubercular peritonitis, may rarely be restored to a normal condition by laparotomy alone, it is best—if they are at all extensively diseased, and especially so if the disease of these organs was primary—that they should be removed. I have observed this rule in my surgical work, the patients recovering from the operation and remaining cured of local infection.

Where there is tuberculosis of one kidney, with the other kidney and ureter in a normal state, it should be removed; and also if there be disease of the ureter in part or in its entirety, it also should be removed as far as the disease extends. This may be done through the abdominal incision after dissecting the kidney from all attachments and ligating the vessels; separate the ureter from its attachments by dissections carefully made under the peritoneum and the bowel through the peritoneal incision over the kidney. Through this opening the ureter can usually be separated from its attachments to below the pelvic brim, and then by an incision through the peritoneum in the pelvic cavity it may be separated to its entrance into the bladder. Through the pelvic peritoneal incision the ureter may be clamped or ligated at points closely approximated, divided, and the upper part removed with the kidney; and in the female the remaining portion may be treated by a vaginal incision, and the introduction of a forceps to clamp the ureter near its attachment to the bladder. In the male, the best we can do is to ligate the ureter as near the bladder as possible.

Where the ureter is diseased but a short distance from the kidney, we may remove only the diseased part, though it is best to remove the entire tube if it can be done without further endangering the life of the patient.

The opposition to nephrectomy is not as great as formerly, because the mortality has been reduced to about ten per cent, with the assurance of a much greater reduction with our present capacity to diagnose positively if there be infection of the other kidney, the mortality in the past having often resulted because of a failure in this particular. This may be done, first, by ureteral catheterization; second, by the use of phloridzin, which causes a non-tubercular kidney to secrete sugar, the reverse being true with a tubercular kidney; third, by the tuberculin test; fourth, and in bladder involvement, by the cystoscope. Koranyi and other men have demonstrated that tuberculin injection will transform a suspicious tubercular kidney into a positive diagnosis, and the value of phloridzin has been demonstrated by Casper and others.

Pousson collected six hundred cases of surgical treatment of renal tuberculosis in which nephrectomy gave excellent results, and nephrotomy poor; but many of these cases were operated upon before the perfection of modern methods of diagnosis.

Albarran in his twenty-nine nephrectomies had one death, and in his fifteen nephrotomies, one death. He advises nephrectomy, even in cases where the other kidney is somewhat involved. Motz reports sixteen nephrectomies with two deaths, and many of his cases appear to have been completely cured.

Israel performed nephrectomy twenty-eight times, and nephrotomy three times, in thirty-one cases of renal tuberculosis; three of the nephrectomies died immediately after the operation, and five between three and eight months after the operation, of some form of tubercular lesion, but ten cases were apparently cured. In eighteen cases the tuberculosis was primary in the kidney; in three, secondary, and in five, doubtful. He favors nephrectomy.

In Simons' thirty-five cases of surgical treatment for renal tuberculosis, the results of nephrectomy were much better than nephrotomy, showing fifty per cent of permanent cures. Two cases were complicated by genital tuberculosis—one in the vulva, the other in the testicle. Bacilli were found in the urine in only ten cases. Three cases were diagnosed by tuberculin; three by ureteral catheterization, and eight by the cystoscope.

Koranyi diagnosticated two cases by tuberculin, in one case the urine showing no abnormality, but the right kidney responded promptly to the tuberculin injection and was removed; in the other case both kidneys responded to the tuberculin test, and neither was removed.

While clinical and post-mortem facts have proven that tuberculosis of the genital structures in the male may be associated with tuberculosis of the bladder, ureter, and kidneys, there is a difference of opinion as to just how the bacilli are conveyed from one structure to another. Blondini claims, from experiments on animals, that tubercular bacilli may pass from the meatus to testicle over the mucous tract, congestion of the parts in puberty favoring the growth of bacteria; but Baumgarten, from extended anatomic and experimental research, claims that bacilli are never conveyed against the currents of blood, lymph, or secretions, and therefore can not pass from the prostate and bladder to the kidney, and never from the prostate to the epididymis; but this question must be decided by further experience and observation.

The extent to which surgical treatment has been carried in the treatment of genital tuberculosis has recently been a subject of much discussion, and, like surgery of the kidney, intestines, and peritoneum, has radical and conservative advocates—some claiming that many cases are cured by removal of local foci without, and sometimes with, involvement of other structures; others, that these cases do as well or better by proper local treatment where it can be applied, combined with approved medicinal, hygienic, and sanitary treatment; others, again, that regardless of extent of involvement all that is ever necessary is the removal of the epididymis, thereby protecting the internal secretion of the testicle and the vitality of the patient following a more serious operation. Bruns, in cases of tuberculosis of the epididymis and testicle, favors castration, claiming to have observed forty-six per cent of cases cured by unilateral castration and fifty-six per cent by bilateral castration, these cases having been observed from three to thirty years after the operation. In the extensive discussion of this subject at the meeting in April, 1901, of the Congress of German Surgeons, Bruns and Simon reported the experience of the Heidelberg clinic for twenty-seven years, during which time single or double castration had been performed in one hundred and seven cases of tuberculosis of the testicle and epididymis, the subsequent history of ninety-two cases being known. In twenty-six of the thirty-three who died, death resulted from tubercular lesions; and in twenty-six of the living there was distinct improvement in distant tuberculosis.

especially marked in tuberculosis of the lungs. Of the thirty-four bilateral castrations the subsequent history was known in twenty-nine cases, eight dying of different tubercular lesions, and twenty-one still living. Of the fifteen cases upon whom secondary castration was performed, great improvement followed in the general condition and in the disease of the bladder and prostate. One case of double castration was followed by mental disturbance; five had diminished sexual desire, while the others had no impairment in sexual desire or power, some having been observed for twenty years after castration. Simon claims sixty-six per cent, or sixty-one of the ninety-two patients cured, fifty-four being now living, and the other seven having died of other diseases after getting well of tuberculosis.

Koëinig, Gussen, Bauer, Longuest, Henle, Bier, Schlange, and Maurice oppose castration, because the tubercular infection usually extends to other regions, and the patients, they claim, recover as well after less radical operations, especially after epididymectomy. Young, in an excellent paper giving the statistics of surgical treatment in genital tuberculosis, read before the last meeting of the genito-urinary surgeons, in conclusion summarizes as follows:

“1. Epididymectomy, with high resection of the vas deferens, is the operation of choice.

“2. Castration should be confined to cases where the testicle proper is involved, or the scrotal disease is extensive.

“3. Double castration should be avoided if possible, a portion at least of the testicle being left, even with the risk of local recurrence of the disease.

“4. Operations upon the seminal vesicles and prostate should be done after removal of the testicular foci has failed to arrest the progress of the disease in these organs and it has spread to the bladder.

“5. Serious involvement of distant parts—pulmonary, urinary, osseous, etc.—does not contraindicate operation, especially since the more exact methods of using cocaine have made general anesthesia unnecessary.

“6. That remarkable disappearance of extensive tuberculosis of the prostate, seminal vesicles, bladder and kidneys, lungs, etc., may follow the simple removal of the testicular foci seems abundantly proven.”

LOUISVILLE.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, December 3, 1901, the President, William H. Wathen, M. D.,
in the Chair.

Cancer of the Breast with Involvement of the Liver. Dr. J. M. Krim: The patient that I desire to bring before you is Mrs. M., aged fifty-four years. Three weeks ago I examined her for the first time, and found the condition which you will now observe of the breast. The right breast is very hard, enlarged, the nipple is markedly retracted, and there are a few nodules over toward the median line. I also made a thorough examination of her abdominal and pelvic cavities, and thought I found a similar condition existing there.

On yesterday I again examined this patient, and invited another practitioner, who is an expert diagnostician, to do likewise; he agreed with me that there was involvement of the abdominal viscera, probably cancerous in character. In an examination to-day the abdominal enlargement, which felt so prominent previously, I found even more prominent.

I brought this woman before the Society that she might be examined, and that we may determine what is best to be done, whether removal of the growth in the breast will be of any benefit to her, or whether some other mode of treatment ought to be adopted.

She states that her menses ceased several years ago, and that she menstruated once about a year ago, not since. She has never had any pain about the breast or the abdomen, and complains of none now, except that the growth in the abdomen gives her some pain occasionally when she wears tight clothes.

The nodule in the breast was first noticed about four years ago.

Discussion. Dr. Geo. W. Griffiths: There is only one puzzling thing about this case, and that is that the woman shows no cachexia, her color being good. It is also rather remarkable that the growth in the breast has been present for four years, and she has been absolutely free from pain.

There is no question in my mind about the liver being involved in the process, and no operative measures are justifiable.

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

Dr. F. W. Samuel: This seems to me to be a typical case of carcinoma. The skin metastases are rather remarkable, and the length of time the growth has existed is rather unusual. It is also unusual to see a case of so long standing without cachexia. I could not make out whether the abdominal enlargement was the liver or not. Passing my hand down over the abdomen I could feel metastases of the lymphatics.

I think any operation in this case would be absolutely futile. What can be done for her is being done by nature as well as it could be done by the surgeon.

Dr. T. P. Satterwhite: This is one of the most remarkable cases that I have ever seen. There is extensive disease of the breast, which extends to the pectoral muscles, the glands in the axilla, the subclavicular glands, with extensive involvement of the abdominal viscera. The liver from the right hypochondrium over across to the left epigastric region is a solid mass, and why the patient has suffered no pain is a mystery to me. Her general appearance would indicate fairly good health.

I agree with Dr. Samuel that she will live longer without operation than she would if surgery was resorted to. There is nothing that can be done which will promise benefit to the patient, and I would advise that no surgical operation be attempted.

Dr. J. W. Irwin: The breast has not ulcerated very much, and it does not often happen that there is much cachexia until ulceration occurs, especially when the disease involves a solid or parenchymatous organ. When the liver is involved in cancer it may go on for a long time, unless ulceration occurs, without any cachexia. I have seen several such cases; but I have found, on the other hand, when there is a cancerous growth of a hollow organ, cachexia follows much sooner. If the breast had ulcerated, or if ulceration had occurred in the liver, there would have been more cachexia. It is not remarkable that this patient has suffered little pain, because there is little or no ulceration. There is a large mass in the region of the liver.

Dr. J. M. Krim: There is no question about operation being unjustifiable in this case; but the patient was brought here to get the judgment of the Society as to whether something else could not be done. This case has gone along as a great many of them do. I have been practicing in her family perhaps for twenty-five years, and she was afraid to have herself examined, fearing she would be told she had something that had to be cut. This is the reason for the delay until

the process advanced to the present stage. The question I desire to ask is whether the Coley method would be of any benefit in this case, or whether it would be advisable to allow nature to take its course. As far as operation is concerned, when I first examined this patient I came to the conclusion that the case was inoperable.

I would like to hear the consensus of opinion of the members of the Society as to their experiences with Coley fluid, and whether it would promise any thing in this case.

Dr. M. F. Coomes: I intended to bring before the Society to-night a patient upon whom I had used the Coley fluid, and whose life, I believe, has been prolonged by this method of treatment. He had a sarcoma, first beginning in the interior of the eyelid, later involving the glands of the face, etc. This man has been improved very much by the use of the Coley fluid, and the disease appears to have been arrested. I have used it in a number of other cases, but can not say whether they were benefited or not; some are alive and some dead. One thing that may be said in its favor is that it will do no harm.

If this case is a sarcoma, the Coley fluid will do good, and if it is a carcinoma, it will do no harm.

Dr. F. W. Samuel: I did not know that the discussion was going to be closed so quickly. In regard to the point made by Dr. Irwin, I would like to ask him how malignant growths ulcerate, how do they break down?

Dr. J. W. Irwin: By destruction of the cell life by the process of pressure.

Dr. F. W. Samuel: The point I wished to make was that malignant growths when they break down, where nutrition is interfered with, where they lie against other structures they press out the blood, resulting in nutritional changes, and the process of breaking down is just like that which occurs in any other form of ulceration, viz., by infection, and when infection occurs rapid cachexia takes place.

It has not been my experience that there is any particular difference in the date of appearance of the cachexia in cancerous processes of hollow or solid organs, except that in the hollow organs it is likely that the growth will ulcerate earlier from coming in contact with organs that are likely to be infected.

Dr. W. H. Wathen: The case before us is unquestionably malignant, and has progressed to a stage that precludes the possibility of any benefit to be derived from surgical intervention. There is extensive

involvement of the liver, and I am sure of adjacent structures, because I have never seen malignant internal involvement to this extent that did not include more than a single organ.

Dr. Irwin's remark in regard to the absence of cachexia because no ulcerative or suppurative process was going on is entirely correct, for the reason that there are no toxines being formed or that are being absorbed and poisoning the system. As soon as this growth begins to destroy adjacent tissue, cachexia will manifest itself rapidly; but if there is no ulceration or suppuration, she may go on without much cachexia almost until she dies. The ulcerative process, as Dr. Samuel remarked, in the hollow organs is generally earlier than it is in solid organs.

Dr. J. W. Irwin: In this connection the report of a case may be of interest. I attended a lady who came under my care after she had been ill for about fifteen months of what was diagnosticated a benign tumor of the liver. I found that the tumor was not connected with the liver; that there was a separation between the liver and the tumor, but I changed the diagnosis to that of a malignant tumor, being forced to do this owing to the nodular condition of the growth, which was in the omentum. No cachexia made its appearance until this woman had been ill for eighteen months. The tumor was a large one; it gradually became nodular in every direction, and she died about nineteen months after the growth was first discovered. The last month she showed some cachexia, but not to any great extent.

Calculus from the Sublingual Gland. Dr. M. F. Coomes: This specimen is a small calculus removed from the sublingual gland. The case presents no features of especial interest, and the specimen is only peculiar because of its perfect shape. I remember in one case of this kind the duct for one and a half inches was completely blocked with a calculus, and the duct had to be slit up for a considerable distance in order to remove the concretion.

Discussion. Dr. G. B. Young: At present I do not see many cases of this kind. I remember to have removed one such concretion several years ago which was an inch and a quarter in length and the size of a lead pencil in diameter. The patient was a young girl, who had had repeated attacks of what was said to be tonsillitis. One night she said there was something sticking up against the under part of her tongue.

Upon examination, I found protruding from the orifice of the gland the calculus spoken of. I caught hold of it with a pair of forceps and removed it. The anterior end of the concretion was tapering, but further back it was fully as large as a lead pencil.

This is the largest calculus of the sublingual gland that I have ever seen, and would like to ask if such large concretions of this gland are not unusual.

Dr. S. G. Dabney: I have seen a few cases of salivary calculi, but have never seen one as large as Dr. Young reports. I removed one several years ago which was perfectly conical in shape and which was attended with a great deal of swelling of the gland. It is an interesting fact that calculi rarely occur in the duct leading from the parotid gland, probably because of the difference in character of the saliva from this gland.

Dr. M. F. Coomes: Referring to the question asked by Dr. Young, I looked up this subject some time ago, and in a recent work it is stated that a few of these large calculi have been removed from the sublingual gland. One was mentioned as an inch and a half long and three fourths of an inch in diameter.

Report of an Interesting Case. Dr. F. W. Samuel: I am induced to report the following case because it bears somewhat upon the case which was presented by Dr. Krim this evening.

At a meeting of the Louisville Academy of Medicine seven years ago, a man, aged forty-seven years, presented himself with a tumor in the epigastrium. Before he presented himself to that society his sickness dated only six months. He began to have such symptoms as occur with so-called chronic dyspepsia; he lost appetite; the food that he took, as he said, always soured and came up after a certain length of time.

When he appeared before the society the tumor was very large, and there was hardly a physician present who did not make the diagnosis that the condition was one of malignancy, and most of them were of the opinion that it was a carcinoma of the stomach. The man was dismissed without any thing being done or suggested for his relief, with the advice of the society for him to go ahead and try to make the best of life.

The condition he presented at that time was about as follows: A large firm tumor occupied the epigastrium; he had lost forty pounds

in weight in six months; he was a man five feet and ten inches tall, and weighed in health one hundred and eighty-five pounds. When I saw him he weighed less than one hundred and forty pounds; his mustache and hair had turned quite gray; six or seven months previously neither hair nor mustache showed any gray hairs; his eyes were sunken; skin leathery in character. He presented all the symptoms of malignancy, especially cachexia.

He returned to the surgical clinic of the Kentucky School of Medicine some time later, where I was then assisting a gentleman much older than myself, and as pain had increased and all symptoms had become aggravated, we said to the patient that probably the best thing to be done was to make an exploratory operation, and the same afternoon he was operated upon before the class. An incision was made in the median line, and a greenish tumor made its appearance. Of course we then thought we were dealing with an enlarged gall-bladder. The fluid that came from this cyst was probably as much as two quarts, and out of the cyst also came a greenish mass which looked like new blue-grass which had been chewed. Upon running my hand further down I still thought I had to deal with a gall-bladder, because it led under the liver, but further investigation proved it to be a retro-peritoneal cyst. We trimmed away the edges, curetted the inside of the cyst, packed the cavity with gauze, and put the man to bed, as we thought, to die; but to our surprise he rapidly recovered from the shock of the operation and made a good recovery, leaving the hospital in about two weeks' time.

Nothing more was heard of the man for six or seven months, when he returned to inform us that he had regained his health and former weight. His hair and mustache were again black, having regained their pigment, and none of us knew him at first. When he stated that he was the patient we had operated upon every one was astonished. He had seen a number of physicians before being operated upon, and was now sent back to them that they might examine him and note the improvement in his condition. Dr. Coomes, and perhaps some of the other gentlemen present, may remember having seen this patient.

Discussion. Dr. M. F. Coomes: I remember the case very well, and was present when he was operated upon at the clinic in the Kentucky School of Medicine. I also saw him subsequently, and regard it as a most remarkable case.

Dr. J. R. Wathen: I would like to ask what explanation can be offered for this patient's hair and mustache returning to its normal color, as stated.

Dr. F. W. Samuel: It has been suggested that this patient may have dyed his hair and mustache. This is an idea which never occurred to me, but I do not believe it is true in this instance. I could not offer any good explanation of the phenomenon at the time, and the one I shall now offer can only be regarded as a theory. Some time after operating upon this case I read in a medical journal an article in regard to the pigmentary deposits of the body, and in that article was discussed the idea that the pigment of the body depended upon the healthiness of the leucocytes; that the color, on the other hand, was due to phagocytosis. We know that if we engraft upon a white person the skin of a negro it becomes perfectly white in time, and this can only be explained by phagocytosis, the pigment being composed of leucocytes. This is the only theory I have ever known which seemed reasonable. Certain growths which are pigmented, as the so-called melanotic cancer, depend entirely upon the leucocytes for their pigment. These growths sometimes lose their pigment after certain irritation.

P. F. BARBOUR, M. D., *Secretary.*

Stated Meeting, December 17, 1901, the President, William H. Wathen, M. D.,
in the Chair.

Sarcoma of the Eyelid. Dr. M. F. Coomes: This gentleman is fifty-three years of age. During the year 1898 he consulted me in regard to a small growth on the inside of the right eyelid, which was then about the size of a grain of corn, and seemed to be innocent in character. I did not consider at that time that it was any thing else other than an innocent growth. The tumor was consequently removed. Very much to my surprise, the growth returned rapidly and extended down the line of the lymphatic on that side of the face until it had reached the size of a large orange, or probably five times the size of the tumor which is now present, and gave all the evidences of malignancy.

In June, 1901, I again removed the tumor, and on this occasion Dr. John R. Wathen submitted a section of it to microscopic examination and pronounced it sarcomatous tissue. In March, 1901, however, I began the use of Coley's fluid, injecting it directly into the growth in the side of the face. To my gratification the growth began to decrease

in size after a few injections of Coley's fluid, and I became convinced that the fluid was exerting some influence upon the facial tumor. I ventured to remove the growth in the eyelid again. At present you will observe there is a small growth on the inside of the lid; whether it is a simple granulation or whether a return of the old growth I do not know. Immediately after removal of the growth from the lower eyelid in June, 1901, a small tumor appeared in the upper eyelid on the same side, which I removed twenty days ago. I believe this last growth was a simple cyst.

I simply exhibit the patient and give you the bare facts connected with it, in order to illustrate the benefit which has apparently been derived from the use of Coley's fluid.

Discussion. Dr. William Cheatham: The growth must be a sarcoma, from the report of Dr. Wathen's examination, and if we can get rid of it by means of Coley's fluid it will be more than many of us have been able to do by this or other means.

Dr. John R. Wathen: This is a most interesting case, and, if I remember correctly, the examination I made showed a spindle-celled sarcoma, and while this is not the most malignant type of sarcoma (the small round-celled growth being the most malignant), yet it has certainly been wonderfully benefited by Coley's fluid. Coley reports a number of cases of sarcoma cured by this method, and Wyeth has lately reported also a number of cases of bone sarcoma cured. Whether this fluid produced the cure or not is still a question with the profession, but in the face of statistics from such men as Coley and Wyeth, and the clinical case before us to-night, the method should certainly receive our indorsement.

The preparation known as Coley's fluid is a simple combination which is made from the streptococcus erysipielatis and the bacillus prodigiosus. I think we ought to have a continued report of Dr. Coomes' case, and any other cases of sarcoma which may have been treated with this fluid, because the profession needs the evidence obtained by these clinical cases before the method can be indorsed, and it is only by the results obtained that we are able to pass judgment. It may be a success or it may be a failure; the method is yet too young for us to pass upon it positively.

Sublingual Calculus: An Unusual Form of Mosquito. Dr. George B. Young: At the last meeting of this Society Dr. Coomes reported a

case of calculus of the sublingual gland, exhibiting the specimen which he had removed. In the discussion which followed I mentioned a large calculus of this character which I had removed from a young girl some years ago who was said to have had tonsillitis some time previously. I exhibit the specimen which I removed at that time, which, you will observe, is about an inch and a quarter in length and in diameter about the size of a lead pencil. It was the largest calculus of this kind that I have ever seen.

I have another specimen which may be of some interest. Last spring I was discussing with my predecessor at the United States Marine Hospital the question as to what form of anopheles they had about the hospital, as I had been subject to several attacks of malaria, and he said he did not know. The following day I was looking over some old files of official letters and found crushed between two letters in the file a perfect specimen of the anopheles *puncticennis*. It shows very distinctly the markings on the wings, and also the equal length of the palpi and proboscis. This is not the most common form of anopheles in the United States, although it has been reported from a number of localities.

Extensive Ulceration and Sloughing of the Buttock. Dr. Ewing Marshall: About six weeks ago a lady seventy-one years of age came under my charge. I took hold of the case just at the death of her husband, and she had been under the care of the doctor who preceded me for about two years, with frequent attacks of something, what, I do not know, for which she received almost daily administrations of morphine. The doctor fell out with the family and gave up the case. I had seen the patient in emergencies two or three times when they could not get their regular physician, and when they asked me to take charge of her I conferred with the other doctor, and, upon being assured by him that he had given up the case, I took charge of her.

The night her husband died she was in a comatose condition, and I was called in; she had then been in this condition for some hours. I have never been perfectly satisfied what that condition was, nor its cause. There was a history that a short time before she went into this comatose condition she had received the second or third hypodermic of morphine, but whether her condition was due to that or not I am uninformed. The doctor who preceded me supposed she had had a hemorrhage into the brain, as her husband at the same time had a hem-

orrhage into the brain and died, never coming out of a comatose condition.. This woman was for forty-eight hours in bed without having her clothes off, for some reason which I never understood, and when her outer clothing was removed it was found that she also had on her corset. She was in a very flabby condition. When I took charge of her I found a large slough in the left buttock, and when this came away it left a hole into which I could have inserted my two fists; it extended down almost to the bone.

I at once stopped all morphine, and she has not received a single dose of the drug since she has been under my care. It was only with that understanding that I would accept charge of the case. The buttock is closing in nicely, to my great surprise. I am using adhesive strips, thus bringing it together, and at the same time dressing it with bovine. This is the first case in which I have systematically tried bovine, and I would like to hear from the members whether they have had any experience with it. It appears to be doing some good in this case. The advanced age of the patient, the large extent of the slough and gangrenous process, and the woman's low state of vitality, made it an ugly case to deal with. She has been fed on concentrated foods, and has been built up in every possible way. The buttock is being closed in, and she is in every way much improved.

Discussion. Dr. H. N. Leavell: I have used bovine quite extensively in ulcerations and have never been disappointed. It seems to produce a healthy condition of sloughing and ulcerating surfaces quicker than any thing I have ever tried. A point of interest in the case reported is the cause of this ulceration; whether or not it could have been produced by a bed-sore primarily, or whether it is diabetic or perhaps due to malnutrition from long-continued use of morphine. These are points which it would be interesting to determine.

Dr. T. P. Satterwhite: Eight years ago a gentleman named Davis, from Chicago, brought me some samples of bovine. I was then treating a case of severe injury of the hand, which occurred in a factory. It became indolent, and showed cessation of any attempt at repair. This gentleman told me the object of his call was to leave some samples of this preparation, and then went on to state that it was especially serviceable, and had been so regarded, in indolent sores and injuries where reparative processes seemed to have stopped, by affording local nutrition to the parts. I asked him to come back in my examin-

ing-room and see the patient just referred to, which he did, and stated that it was a typical case on which to try bovine. I was then ready to start East, and he said as he would be in town several days, if I would allow him he would treat and dress the man's hand for me, which he did. I told him when he left to refer the patient to my friend, the late Dr. Guntermann. When I returned there was a wonderful improvement in the condition of the patient's hand. I have used bovine quite frequently since that time, and am partial to it. There is undoubtedly virtue in it, and it does act locally, causing repair.

As to the mode of dressing the case to which I refer, the gentleman laid great stress upon the manner of applying this agent. He took absorbing lint and wet it, first cleansing the part with peroxide of hydrogen, particularly if there was any evidence of suppuration, and then placed over the surface this absorbing lint saturated with bovine; over this he placed another layer of lint, greased with lard, and then bandaged the wound and allowed this bandage and dressing to remain without changing for twenty-four or forty-eight hours. He then put on a fresh dressing, as I have described.

Dr. M. F. Coomes: I am skeptical about the preparation known as bovine. If I understand correctly, it is nothing more or less than a solution of blood put up in alcohol and glycerine. I do not understand the physiology or therapy of it, and wish to be put on record as believing that if you would take glycerine and alcohol and use it in the same way you do bovine that you will get the same results.

Dr. Carl Weidner: If we want to try an experiment to test the results of any one agent we ought to use nothing else. If we are going to test the virtues of bovine we should employ nothing else in dressing the wound. The dressing, for instance, mentioned by Dr. Satterwhite is a complex one.

As to the rationale of this method of treatment, we have little prospects of any material external nutrition about a surface in a state of active sloughing or in a gangrenous condition. We may expect some absorption of nutriment possibly on a healthy granulating surface. I have not much faith in this preparation, for the reason that when it was first brought out the statement was made by its promoters that it contained blood-cells well preserved. I made a thorough examination and convinced myself that there was not a sign of a blood-cell visible.

I had the courage to use this preparation upon one occasion, I think rather irrationally, in a case of gangrene. It was the worst, in fact, the

only case of extreme gangrene I have ever seen following typhoid fever. The patient, a girl, seamstress, in a very much debilitated condition, developed typhoid fever, and during the second week of the disease developed something which had never happened in my practice before—a most intense decubitus, which became gangrenous. I blame the nurse in one of our institutions for the condition, as she put under the patient an old rusty bedpan, which was left there for over an hour. I believe this started the decubitus which developed gangrene, a patch the size of my two hands over the sacrum finally extending down to the bone over both hips, the infection going down to the capsule of the joint. After seventeen weeks the patient made a partial recovery, up to the point that she could go about in a crippled condition. I also used peroxide of hydrogen and other cleansing agents, trimmed away the gangrenous edges, etc. I was induced in this case to use bovine by a medical friend.

Dr. John R. Wathen: I do not believe that bovine contains either alcohol or glycerine, for the reason that both these agents are irritating to a raw surface. There is no irritation produced by the application of bovine in the treatment of burns, where I have employed it more than anywhere else. The best results have been secured from the application of bovine to granulating surfaces, and very poor results from its use where there was any suppuration or necrosis present.

In regard to the application of bovine, I differ from Dr. Satterwhite in the way it should be applied. If you apply it on lint or cotton it becomes a hardened mass, and in attempting its removal to change the dressing you must of necessity also pull off some of the flesh with it. I first apply a thin layer of plain gauze over the surface, then over this I place lightly some absorbent cotton, and pour on the bovine the same as I would pour out molasses, saturating the cotton thoroughly; over this I place a piece of rubber tissue to prevent soiling adjacent structures, then apply a bandage. I remove this dressing and apply a fresh one in the same manner each day. As bovine will harden and irritate the wound, and also the patient, if left on forty-eight hours, the dressing should be changed once a day. If taken off every day you will find the granulating area gradually building up and becoming more healthy in appearance. I have gotten results from bovine that I have never gotten from any other application, especially in the treatment of burns. I highly indorse this preparation as an application for burns, but where there is a sloughing or suppurating

surface it may do more harm than good. I noticed in my experience at the City Hospital last year, where we had a number of cases of bad burns to deal with, that the application of bovine kept the surface dry, and results were excellent.

Dr. Ewing Marshall: In reply to both Dr. Weidner and Dr. Wathen: Before I began the use of bovine I poulticed the parts with flaxseed meal and charcoal, and also used carbolic acid until the wound was gotten in a non-suppurating condition. I agree perfectly in the statement that bovine is not desirable while there is any suppuration, at least, until suppuration can be reduced I would not apply it.

As to the method of application: I poured bovine into the cavity, then applied gauze over it and drew the edges together as well as I could, to try to hold the preparation in the wound, then covered with the usual bandage. I had the nurse dress this wound twice a day, morning and evening.

As to the point raised by Dr. Leavell in regard to the cause of this injury, I think it resulted from the debilitated condition of the patient plus the steels of her corset while she was in a comatose condition for forty-eight hours, prolonged pressure, and her low state of vitality.

A Preliminary Report on Tetra-Ethyl-Ammonium-Hydrate and Solution of Chloride of Platinum. Dr. J. W. Irwin: A few months ago my attention was called to a new remedy, tetra-ethyl-ammonium-hydrate. It was said to be the greatest uric acid solvent known, that it had been prepared by Schuchardt of Goerlitz, and subsequently by Merck; that it could be obtained at pleasure from druggists in a short time after prescribing it. To further show that it was a very valuable remedy I was informed that Edison had been using the drug by cataphoresis.

I had several cases on hand that needed an uric acid solvent, for which I prescribed the drug about sixty days ago. There were several cases of chronic rheumatism and three cases of rheumatic arthritis or rheumatic deformans.

In one of the cases of chronic rheumatism that had been going the rounds for a number of years, the gentleman had been passing eighteen to twenty ounces of urine daily before the administration of the drug. I prescribed the drug in the usual recommended doses, viz., five to ten minims of a ten-per-cent solution of the tetra-ethyl-ammonium-hydrate in mixture three times a day. I may say here that it has a bitter, slightly aromatic taste, rather pungent. It is about as bitter as strychnine.

After administering the drug for a few days I found that the patient's joints began to grow supple. There was no marked diminution of the stiffening for the first two days; after three days I found the joints had become more limber, and much to my surprise the action on the kidneys proved positive, as beginning with the third day the man passed ninety-five ounces of urine in the twenty-four hours. I gave seven and a half minims at a dose, three times a day. I think it is a very valuable drug.

I have given this preparation now about sixty days to that patient, and he has no pain anywhere. The joints have become supple, and some of the swelling seems to have disappeared.

The second case was one of rheumatic deformans in a lady who had been sick for sixteen years, almost bedridden. I administered to her for the first few days five drops of the preparation three times daily, then increased it to ten drops three times a day. She has now been taking it for a month. She is able to get about with much more comfort than she did before, and the swelling about the joints, even the nodosities, appear to have diminished in size. When she commenced taking the drug she was voiding from twenty-four to twenty-six ounces of urine a day, now she is voiding from eighty to eighty-six ounces a day. The effect upon the kidneys seems to be positive in these two cases.

I have prescribed the drug for about a dozen patients in Louisville, and for others out of Louisville. In all, I have used about one pound of the ten-per-cent solution of tetra-ethyl-ammonium-hydrate, always administering it after meals, well diluted with water, with the result of causing an increased amount of urine in every instance, though not so markedly as in the two cases mentioned. Diminution of pain in every case has been well marked; there has been increased suppleness about the joints, and even apparent diminution of both new and old deposits.

I saw about three months ago, for the first time, a lady who had some stomach trouble. Examination of the contents of the stomach made by a chemist showed that there was a deficiency of hydrochloric acid. There was no tumor; there was a little difficulty in swallowing, and when she tried to drink rapidly fluid would be regurgitated through the mouth. Upon listening with the stethoscope I found that fluids trickled into the stomach, and there appeared to be a decided narrowing of the esophagus at the gastric orifice. There was some soreness at that point; there was no vomiting; a great amount of gas was

present; loss of appetite and constant emaciation. I could not discover any thickening at any point in the stomach, as it is very difficult to reach the esophageal end of the stomach. I tried giving the patient solids, and watched the process of swallowing. A portion of the food would be regurgitated after it got down near the lower end of the esophagus. When she swallowed fluids slowly the process would be carried on without much trouble, but when she swallowed rapidly quite a portion would be regurgitated.

In this case I feared the presence of cancer. I found a deficiency of hydrochloric acid in the contents of the stomach, a sample of the contents being obtained with a very small tube about the size of a No. 12 soft catheter. This was the largest size of tube that could be inserted into the stomach, which showed that there was considerable narrowing. I believe the case is one of cancer of the stomach; the history, age of the woman (fifty-four years), and the cachexia which was present all pointed to this conclusion. There was a history of two cases of cancer in the family on the maternal side.

I prescribed a new drug which has been recently recommended in these cases, and, I think, with very happy results—the solution of the chloride of platinum. I gave first one drop of this solution three times a day. It had the effect of stimulating the heart's action and causing a rise in temperature of about half a degree, lasting for half an hour after its administration. I increased the dose from one drop of a one-per-cent solution up to five drops, and intend to increase it to ten minims. After using the drug for two weeks I found the patient could swallow better; she could assimilate food better, and now she is beginning to gain in weight. She has gained four pounds in the last two weeks. I found that I could also introduce into the stomach a tube double the size of the first one without causing the patient pain or inconvenience.

In view of these facts I carried the same line of treatment into effect in another case of cancer of the stomach. The patient, a woman, was given at first one minim of the one-per-cent solution of the chloride of platinum, afterward the dose was increased to five minims, well diluted with water. She has now been taking the drug two weeks. As in the first case, it has the effect of lessening pain and making the patient much more comfortable. In this case there is a well-defined tumor not far from the pyloric end of the stomach. The woman has lost forty-six pounds in weight within the last eight months, which was

the first time I was able to diagnosticate her trouble as cancer. There were all the clinical signs of cancer present, without analysis of the stomach contents. There was pain which came on in the afternoon, lasting a few hours, then coming on again about four o'clock in the morning and lasting for a short time. After the administration of platinum chloride for a few days pain ceased, and the cachexia is disappearing. There is a suppleness of the skin; the skin is not dry as it was before the administration of this drug. Moisture appears on the body. What the final result will be in this case I do not know, but it is evident the tumor has not grown any larger in the last three weeks.

I do not know how the drug acts; it appears to have no effect on any organ except to stimulate the heart's action; it has no appreciable effect upon the kidneys or bowels, but it does create a tendency to take more food, which evidently conduces to a better state of nutrition.

Discussion. Dr. Ewing Marshall: I am glad to hear Dr. Irwin's remarks concerning the new uric acid solvent, as we are badly in need of such a remedy. I have a case of rheumatism under observation at present which has given me a great deal of trouble, a young woman with a distinctly rheumatic history. She has pain apparently following the course of the sciatic nerve down to the knee, which comes on principally toward nightfall and grows worse during the night. She has some pain during the day. When I was first called to see her she had been suffering for a few days, and I at once gave her salicylate of soda; the first twenty-four hours she took seventy-five grains of this drug, which produced absolutely no effect. I have since tried various remedies without beneficial result.

"Crazy Toe." Dr. T. P. Satterwhite: I do not suppose there is a doctor present who has not been consulted, particularly by lady patients, for pain in the third toe, a very severe neuralgic pain, so much so that they often have to stop and take off their shoes. I knew of one lady whose pain was so severe that she often had to take off her shoe and go home in her stocking feet. This is a condition which has been brought to my attention many times in the past, and we are often criticised because of our inability to relieve a condition seemingly so simple. In one instance a lady insisted that I should amputate her toe, which I proceeded to do; since, she never suffered a moment. I remember three cases of this kind that were especially severe. Two of them were

rheumatic subjects, and if Dr. Irwin's remedy will do what is claimed for it, viz., eliminate uric acid from the system, which I suspect may be the cause of this condition, it ought to be a good thing to administer in the cases I have mentioned.

Dr. Ewing Marshall: The toe spoken of by Dr. Satterwhite has been called the "crazy toe," due to the fact of the shoe being too tight and crowding the bones together until there is a bony excrescence, which is irritated at every step that is taken. Pain from this irritation is sometimes so severe, and pressure upon the nerve so great, that oftentimes the only thing to do is to amputate the toe. With this view of the causation of the condition it would not appear that the remedy mentioned by Dr. Irwin would have any effect.

The essay of the evening, "Tuberculosis of the Peritoneum and Intestines," was read by William H. Wathem, A. M., M. D., LL. D. See p. 41.]

Discussion. Dr. J. M. Krim: I have never believed that the peritoneum was ever the seat of primary tuberculosis—that tubercular peritonitis was always secondary. I have always found in those cases where tubercular peritonitis existed, that there was a primary focus somewhere else in the body. In most instances the pleura is involved, or perhaps the lung itself. I remember a case seen not long ago, where an opening occurred at about the fifth rib and considerable muco-purulent material discharged therefrom. In the course of five or six weeks evidence of tubercular peritonitis manifested itself. In another instance a man who had been a heavy drinker, who had been through one of the Keeley institutions in Indiana and apparently cured of the drink habit, developed diabetes, and it was supposed he suffered from this disease only. Some time later he developed tubercular peritonitis; an abscess occurred just below the umbilicus. I opened the abscess and liberated fully a pint of muco-purulent material, which, upon examination, was found to contain tubercle bacilli. About four weeks afterward another abscess appeared below the scapula; a soft, fluctuating tumor formed; this was also opened, and contained six ounces of muco-purulent substance. There had been no cough up to that time. He then began to cough, and died four months later of pulmonary tuberculosis.

Dr. F. W. Samuel: The essayist seems to have taken up two subjects in one paper. In intestinal tuberculosis, as far as an operative standpoint is concerned, I have had no experience.

I am not so sanguine as the essayist in regard to the surgical treatment of tubercular peritonitis. I have operated several times for tubercular peritonitis, with varying results. When the idea was first suggested to open the belly, drain out the fluid, and separate adhesions if found present in tubercular peritonitis, I also came to the conclusion that this was the best method of treatment. On the other hand, where there is tuberculous ulceration with cheesy masses, an attempt to separate adhesions may do much harm. I recall one case of this kind where I tried to separate the adhesions and opened the bowel; a fecal fistula resulted, which I was never able to close. I believe the experience of most operators is that when you once get a fecal fistula in a case of this kind that you can never get it to close. In the case I have spoken of the patient died a year after the operation; fistula open. In tubercular peritonitis, where you have miliary tubercles scattered over the peritoneum, with a great deal of fluid, much good will sometimes result from operative intervention. I have one case of this kind which has remained cured for two and a half years. Some of the members present will recall a negro boy operated upon in my clinic. He had a double hernia, and the scrotum was very large from the fluid in it. I operated upon him by the Halstead open operation for the cure of the hernia, and in doing so found that the peritoneum, testicles, etc., were studded with tubercles; one testicle was so much involved that I deemed it wise to remove it; the other one was badly diseased, but was curetted and left intact; I also irritated the peritoneum as much as I thought was wise, and after the double herniotomy put the boy to bed, believing that he would do badly. Fortunately, the incision closed *per primam*. I examined him several months afterward, and he was much improved in general health, and the hernia was cured. I heard from him two years ago, and at last accounts he was working in a brickyard in Indiana. I believe it is only in cases of this character that we may expect good results from opening the abdomen. In the dry, cheesy, adhesive variety the patient may be cured by nature, and the best thing for the surgeon to do is to let them alone. As far as I am individually concerned, I shall pass my cases of tubercular peritonitis over to the physician from now, with a few exceptions.

Dr. J. W. Irwin: The paper brings to my mind several things. First, the great use the surgeon can make of the knife, and the great possibilities—hopes for from the use of the knife—even in wholly incurable affections. It might be said to be bold surgery. Any thing

is worth a trial if it has for its purpose the alleviation of pain or the extension of human life, and if, by reason of those facts, this operation lessens pain and extends the period of human life it is worth a trial. But before resorting to an operation for the cure of a disease which is wholly secondary—not a primary affection—the surgeon, I think, should stop and consider what good is to be accomplished by an operation that can only for a short time afford relief; on the other hand, may he not by his operation leave behind some cicatrices or adhesions which will increase the suffering and pain rather than mitigate or cure them? All of these considerations should be taken into account before opening the abdomen in a case of tubercular peritonitis. In the next place, how is the surgeon to make an accurate diagnosis unless he has some stepping-stones, unless there is a previous history of tuberculosis, or some reason to believe that the patient has tuberculosis elsewhere when he has peritonitis? How is he going to diagnosticate tubercular peritonitis and exclude tubercular infection of the intestines or of other internal organs? It is almost impossible to make a correct diagnosis along this line. The surgeon may suspect tubercular peritonitis and be reasonably sure that such a thing does exist, but his suspicion is only aroused when it occurs as a secondary affection, not a primary one. Then, if you will study tuberculosis as it affects external parts of the body, the lungs, etc., you will find that the ultimate end is dissolution and death, and when the system becomes infiltrated with tubercles the removal of a section of the peritoneum, or even the entire peritoneum will not cure the disease. How are we going to state positively that the bacilli have not penetrated or infiltrated other organs? It is impossible to say. The most that can be said touching the question of diagnosis, which every skilled surgeon must make before he uses the knife, before he applies the antiphlogistic touch to the abdomen, is that he believes it to be a case of tubercular peritonitis. Take any patient who suffers from tubercular peritonitis, or from tuberculosis of any of the abdominal organs, and he has but a short time to live; you can not rid the system of the infection, therefore I hold that an operation for the cure of tubercular peritonitis, especially as it is always a secondary affection, must be a dismal failure. The statement of Dr. Wathen, “touch me not,” should, I think, apply to all cases of tuberculosis affecting the intestine or peritoneum. It would be a good rule to follow to let the patient die as easily as possible. I do not see any better treatment in these cases, from the standpoint of the physician,

than euthanasia. Give them such remedies as will ease their pain and let them go on to death as easily, as quietly, as possible. Some of these patients will live a considerable time; others will die in a very short period. These cases should be turned over to the physician, whose duty it should be to administer such remedies as will relieve pain and let them die as easily as possible.

Dr. M. F. Coomes: The essayist stated that ulceration occurs most frequently in the neighborhood of Peyer's patches and in the colon. The probable reason for this is the fact that the colon is the receptacle of more solid fecal matter, and is therefore more liable to ulceration, thus affording a nidus for infection with tuberculous material. Again, there is a very rich blood-supply in these solitary glands, not only the ileum, but also the cecum and ascending colon. It is possible infection occurs in this way, and these glandular structures more frequently break down than other tissues.

Dr. Ewing Marshall: I have recently noticed some German statistics which show that in a collection of five hundred post-mortems ninety-six per cent were found to be the subject of tuberculosis, though the patients were accredited as dying from other causes; and the writer of the report ventures the opinion that probably if more care was observed in making post-mortems that almost one hundred per cent of tuberculosis would be found; that there would be found evidences of tubercular nodules dating back perhaps years prior to death.

I agree entirely with the speakers who have preceded me that tuberculosis is rarely circumscribed; that it is general. Further, I agree with Drs. Samuel and Irwin in regard to the use of the knife in tubercular peritonitis. My observation with tuberculous patients has been that there is a tendency, if they are well cared for, for them to improve temporarily; but if you injure them in any way they will go down hill very quickly, and I should think that surgery would be classed as an injury to these people, and would increase the trouble elsewhere even if there was temporary benefit in the abdominal cavity.

Dr. F. W. Samuel: In my previous remarks I referred only to tubercular peritonitis; my experience with this disease has been a very sad one, and I am only speaking of my own experience. One class of these cases is markedly benefited by operative intervention, and good results have been reported by men in whose statements we have every reason to have confidence. A number of cases have been reported as having gotten well, but the majority of them, I believe, have a sad ending.

Dr. W. H. Wathen: If the members understood me to take a sanguine view of the results of surgery in the treatment of tubercular peritonitis, when applied to any extensive number of cases, they have been mistaken. I simply desired to present to the Society the results of the work of surgeons of the world who have had the greatest experience in the surgical treatment of tubercular peritonitis and of tubercular disease of the intestines and other intra-abdominal and pelvic structures. It is as clearly demonstrated as it is possible to demonstrate any thing that tubercular peritonitis has, in many instances, been permanently cured following laparotomy, for these patients have died afterward of other troubles and in post-mortems the peritoneum was found in an apparently normal state, having been the seat of tubercular peritonitis when the laparotomy was performed. The only argument, therefore, that can be offered against laparotomy is whether these patients would have recovered just as well from tubercular peritonitis under hygienic, sanitary, and medicinal treatment as they did under the surgical treatment.

From my remarks you will judge that the number of operable cases is limited, because operation is only indicated where you have diagnosed the disease as primary and it has remained primary until the operation, or where the disease of some other part of the body is not so extensive as to in any sense destroy or seriously cripple the structures involved. In the early stages of tubercular peritonitis very little good can be expected from operative intervention, but in other stages great benefit is often derived and the patients' lives are prolonged. Sometimes in operating upon the tubes and ovaries tubercular disease is found confined to these structures, or to structures lying immediately in contact with them. Operations have been performed many times, removing these tuberculous organs, with permanent results. I think we can show clearly that operations have been performed for the removal of tuberculous kidneys, tuberculous uteri, etc., that have not returned, and the patients have apparently been cured. Many operations have been performed where a tuberculous bowel had become stenosed, with no active condition of tuberculosis anywhere else, simply a tuberculous contraction, where the fecal matter could hardly pass through the stenosis; and certainly in such instances either an anastomosis, which can be easily done, or even a resection, if necessary, would be indicated, because the patient can not live otherwise.

So while I do not believe that operative intervention is indicated in very many instances of tubercular involvement of the peritoneum or

intestines, I am equally sure that it is indicated in other instances; but there are distinguished surgeons who to-day believe that in a general way these patients with tubercular peritonitis will recover about as well under general hygienic and sanitary treatment as they will following an operation. But I do not believe there is any one who claims that a tuberculous bowel, kidney, uterus, ovary, tube, or genital organ in the male, should not be operated upon where there is no evidence of a general tuberculosis, the disease having resisted other treatment.

P. F. BARBOUR, M. D., *Secretary.*

Reviews and Bibliography.

The Practical Medicine Series of Year Books. Comprising ten volumes on the year's progress in medicine and surgery. Issued monthly. Under the general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate School. Volume I, General Medicine. Edited by FRANK BILLINGS, M. S., M. D., Head of Medical Department and Dean of the Faculty of Rush Medical College, Chicago. With the collaboration of S. C. STANTON, M. D. October, 1901. The Year Book Publishers, Chicago.

This is one of the practical medicine series which is to be composed of ten volumes and to be issued monthly. It will be the effort of the editors of these volumes to give everything that is new, practical, and up-to-date in medicine and surgery. This work entails a great deal of labor as well as time in selecting from the various medical books and journals that are published. In short, each of these volumes is an epitomized statement concerning diseases of which they treat, and is well worthy of the price asked for it. The price of the volume is \$1.50. The whole series will be \$7.50.

A Manual of Clinical Laboratory Methods. By JOHN BENJAMIN NICHOLS, M. D., in charge of Clinical Laboratory, Garfield Hospital; Hematologist to Columbian University Hospital; Professor of Normal Histology in Medical Department of Columbian University, Washington, D. C. Illustrated. New York: William Wood & Co.

This is a book of some three hundred pages, and contains all of the most practical knowledge concerning laboratory methods employed in clinical medicine. It gives various methods of estimating the number of blood corpuscles by volume and by count. It gives the composition of the secretions and excretions in detail, and gives minute instructions as to all

procedures connected with the analysis of these fluids. The book is well indexed and well paragraphed. Important points connected with a subject are characterized by large type. It is one of the most valuable books of its kind it has been our good fortune to see.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Surgical and Medical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; Laureate of the Royal Academy of Medicine in Belgium, of the Medical Society of London; Corresponding Fellow of the *Sociedad Espanola de Hygiene* of Madrid; Member of the Association of American Physicians, etc. Assisted by H. R. M. LANDIS, M. D., Assistant to the Out-Patient Medical Department of the Jefferson Medical College Hospital. Philadelphia and New York: Lea Brothers & Co. 1901.

This volume contains diseases of digestive tract and allied organs; liver, pancreas, and peritoneum; genito-urinary diseases; anesthetics, fractures, dislocations, amputations, surgery of the extremities, and orthopedics; diseases of the kidneys; physiology; hygiene, and practical therapeutic referendum.

This volume, like all of its predecessors, is up-to-date in every particular. The report of spinal anesthesia by lumbar puncture is alone worth the price of the book. This book is rich in recent surgical literature, and it is difficult to see how any up-to-date surgeon can afford to be without it. No words of ours can add any thing to its value.

Typhoid and Typhus Fevers. By Dr. H. CURSCHMANN, of Leipzig. Edited, with additions, by WILLIAM OSLER, M. D., Professor of the Principles and Practice of Medicine, Johns Hopkins University. Handsome octavo of 646 pages, illustrated, including a number of valuable temperature charts and two full-page colored plates. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$5.00 net; sheep or half morocco, \$6.00 net.

The original German edition of this volume is universally recognized as the standard authority on the subjects of which it treats. The American edition, however, even surpasses the German, for, besides containing all the material of the original, extensive additions have been made to almost every chapter, thus incorporating into the work the very latest views on the subjects under discussion.

The chapter on bacteriology has been thoroughly revised and much new material added, giving prominent consideration to the distribution of the typhoid bacilli, especially in the urine, the rose-spots, and the blood.

To the chapter on pathology many minor additions have been made, incorporating the important work of Mallory. The literature on the localized lesions due to the bacillus has been carefully reviewed and made to conform to the most recent advances in that part of the subject. Thayer's exhaustive study of the state of the blood has been utilized, and the surgical aspects of typhoid fever have been fully revised with the aid of Keen's monograph.

Much valuable material has been added to the chapter on diagnosis by bacteriologic methods, particularly with reference to the recent work in blood-cultures and on the detection of bacilli in the urine.

The chapter on perforation and peritonitis has been practically rewritten, as has also the section on the hepatic complications of typhoid.

Thus it will be seen that the American edition of this valuable work, while still possessing all the commendable qualities of the original German, is greatly enhanced in its field of usefulness by being brought strictly abreast of the latest literature on the subjects, and by representative specialists.

The author says: "The statement of Sicard as to the almost constant presence of typhoid bacilli in the expired air of typhoid patients is most remarkable, and requires confirmation." Many practitioners have suspected this for a long time, and we hope that this question of expired air of the typhoid patient containing the germs will be fully settled, for if this be true, no doubt when the facts are ascertained this knowledge will enable the physician and the layman likewise to prevent the occurrence of many cases of this disease.

Peru History of Coca. "The Divine Plant" of the Incas. With an introductory account of the Incas and of the Andean Indians of to-day. By W. GOLDEN MORTIMER, M. D., Fellow of the New York Academy of Medicine; Member of the Medical Society of the County of New York; Member of the New York Academy of Sciences; Member of the American Museum of Natural History; formerly Assistant Surgeon to the New York Throat and Nose Hospital, etc. With one hundred and seventy-eight illustrations. New York: J. H. Vail & Company. 1901.

In his preface the author says, "Presuming that such a subject will awaken popular regard in a matter of common interest, I have endeavored to surround a myriad of authentic facts with sufficient associate detail that is entertaining, and to present the data without the dryness usually attributed to scientific utterance in a manner, as I trust, that shall maintain the attention of the general reader.

"Centuries before the introduction of cocaine to anesthetic uses, the world had been amazed by accounts of the energy-creating properties ascribed to a plant intimately associated with the rites and customs of the ancient Peruvians, and first made known through the chroniclers of Spanish conquest in America. The history of this plant, known as coca, is the history of the Incan race, and is entwined throughout the associations of the vast socialistic empire of those early people of Peru. The story of that remarkable people has been adequately told through the voluminous writings of a host of historians, and more connectedly related for English readers in the admirable works of Helps and Prescott. But the true story of coca, which the Incans regarded—because of its properties of imparting endurance—as the 'divine plant' has hitherto never been fully set forth. Indeed, the authoritative literature of coca—such as contained in text-books—is so filled with inaccuracies and contradictory statements that the opinion

of a reader seeking information from such a source must fluctuate between the account he might last have read and some former utterance which was diametrically opposite in conclusion. As a result of this want of knowledge much that has been supposed must be forgotten before the mind can be receptive for the truths of coca which are built upon facts."

This book is more of a historical work than a medical one, giving as it does a very excellent history of the Incas and the Adecan Indians. It is beautifully illustrated with nearly two hundred photogravures and engravings. It is a book well worthy of perusal for its historical facts, to say nothing of its important history of coca, which has become the source of one of our most valuable medicinal agents.

THE USE OF X-RAYS IN LUPUS.—Dr. W. A. Pusey (Chicago Medical Recorder) says that in the proper use of X-rays we have a remedy of the greatest importance in this intractable disease. The advantages which this method seems to offer for the treatment of lupus may be briefly summarized as follows: 1. Nearly all the cases which have been treated by this method have been of grave, persistent character, and have resisted for years recognized forms of treatment. The diagnosis in practically all of the cases is above question. 2. The fact that this method is practically painless appears as an advantage of no small consideration. 3. All observers agree upon the excellent character of the scars following this method of treatment. They are soft, pliable, and thin, and nearly approach the normal skin in appearance. The other method of treatment which this one approaches most closely, and with which it must bear comparison, is Finsen's treatment by the ultra-violet rays of white light. The two methods are similar in using for destruction of the lupous tissue actinic rays of high potency. There are the best reasons for believing that the methods are identical in principle, one using highly actinic rays derived from white light, the other similar or identical rays which are found among the X-rays. The results attained by the two methods are strikingly similar, and are a further argument for the similarity or identity of the essential agents. The advantages which the X-ray method offers are convenience and rapidity of results. Finsen's method of treatment is inconvenient and excessively slow. Under his method patients have daily sittings of about two hours, and in an hour it is only possible to treat an area a little over half an inch square. The time required for the treatment of a case extends over about two years. With the method of treatment by X-rays, on the other hand, the sittings are short, only a few minutes daily, and an area of lupus involving the entire side of the face can be treated at one sitting. The results, moreover, are obtained in a few weeks, or at most in a few months. *New York Medical Journal.*

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OVERWORKED SCHOOL-CHILDREN.

The question of increasing the hours of attendance in the public schools of this city has recently been agitated by those interested in the matter. It is difficult to understand why any one should insist on increasing the number of hours' attendance in our public schools, as they are already sufficient for all practical purposes. The greater part of the work done by the school-children is accomplished at their homes, and longer hours can be of no benefit whatever; on the contrary, must of necessity be a detriment to the children. If there is any one fact thoroughly established in this country it is that we are living too fast. This fast living is enforced upon our children; they are rushed into the school-room at a tender age and compelled to do an excessive amount of work, and no one knows better than the medical man the harmful results of this high-pressure method of education. Time and again it has been our misfortune to witness the wrecking of a young girl as the result of excessive school work. They seem to be less able to stand the strain than boys. Every inducement is held out to those in attendance to reach a maximum, not only in absolute attendance but in excellency of grading. With many children this is not difficult, while others can only keep up an average by making an extreme effort, and this

effort, day after day, finally results in wrecking their physical constitution. If there was any necessity, or even apparent necessity, for all of this rush and high-pressure work there might be some excuse for it, but there is none, and the people who are advocating it should know better. They have been observers for years, and have seen the results of high-pressure work, not only in females but among males, and as the school is supported by taxpayers they should have the right to say what they want concerning the physical management of their children. We are of the opinion that no good whatever will result from increasing the length of the study hours in our public schools. As a teacher of medicine for more than a quarter of a century we have been a very close observer of the results of high-pressure work among students, and feel confident that in our medical schools the pressure is too great for the average physical man—too many working hours and too much outside work to keep up with the recitations—and yet the working hours in the medical schools are, comparatively speaking, fewer than those of the public schools. More play and less work on the part of the average child in attendance at the public schools will result in the development of a better class of men and women than are being developed to-day.

THE FEE-SPLITTERS.

The abominable practice of fee-splitting must come to an end. The fellow who auctioneers his patients off to the surgeon and specialist—to the highest bidder—has had his day, and will as surely receive his just deserts as time lasts. At the next meeting of the American Medical Association there can be no doubt but what that great body will take such action as will force every one of the fee-splitters to abandon the abominable practice or be expelled from any medical society that they may then belong to, and will bar them from entering any medical societies in the future. There can be no way of evading the punishment that is in sight for them; it is inevitable.

Current Surgical and Medical Selections.

SOME SOURCES OF ERROR IN SKIAGRAPHS.—Every method of physical exploration can yield information only with regard to physical conditions, but for the establishment of the anatomic and physiologic significance of which other data will be required. It should hardly be necessary to add that the observations must themselves be in the first place above suspicion. Here, as in the application of all methods of precision, are demanded the two essentials of correct perception and equally logical interpretation, and both of these bespeak a certain foreknowledge. While the large possibilities for diagnostic usefulness of the X-rays were early appreciated, it soon became recognized that the results obtained were susceptible of varied interpretations, in accordance with the skill and the experience of the observer and the opportunities for the development of what, for want of a more convenient term, may be designated "artefacts."

Some of these sources of error are pointed out in a communication presented to the Society of Medical Jurisprudence, of New York, by Dr. Carl Beck, who speaks from an extensive experience. To reduce the likelihood of error to a minimum, it should always be borne in mind that the X-rays produce only shadow-pictures, for the correct interpretation of which a thorough knowledge of the anatomic relations of the parts is absolutely essential. The density of the shadows produced will necessarily vary with the position in which the picture is taken, and, for purposes of control, the observation should be made in at least two directions. For purposes of precise localization it may be necessary to make several observations and to employ special devices. One must always first assure himself that the shadows found are not due to the presence of normal structures, even though these be at times unusual, before deciding them of abnormal origin. It is, therefore, often useful to compare opposite sides of the body under like conditions. As has been indicated, the possibility of anomalous or exceptional conditions, in themselves not abnormal, should always be borne in mind. Then the incompleteness of ossification in the young, and the bone-changes attending rachitis, for instance, may give rise to appearances in skiagraphs simulating the results of traumatic lesions. It is further appropriately pointed out that the apparent deformity disclosed by the skiagraph is not a trustworthy index of the degree of disability. The point ever to be remembered in the employment of any and all methods of physical diagnosis is that the results yielded are in themselves not conclusive, but their significance will depend on the interpretation given them, and this will be governed by a full knowledge of all the possibilities in the case.—*Journal American Medical Association.*

PRIMARY RENAL TUBERCULOSIS.—O. G. Ramsay (*Annals of Surgery*, October, 1900) formulates the following conclusions upon this subject: (1)

That primary renal tuberculosis may be classed as a semi-malignant form of inflammation, and that for this reason surgical treatment is always indicated. (2) That this surgical treatment will have a palliative or a curative end in view depending upon the condition of the patient and the extent of the local pathological process. (3) That nephrotomy in renal tuberculous processes is to be designated as a palliative operation, with the chief aim of the immediate relief of grave symptoms, and that it does not preclude a secondary nephrectomy, and that coupled with free evacuation and drainage of abscesses is a most valuable procedure. (4) That resection of a diseased portion of a tuberculous kidney is a most dangerous procedure, because it is not always possible to take out all the disease and a focus so left behind may infect the other kidney or the system at large or both. (5) That nephrectomy or nephro-ureterectomy is distinctly indicated in every suitable case, and in suitable cases should result in permanent cure in 55.5 per cent of all cases. (6) That the indications against nephrectomy are tuberculous disease of the other kidney or of other organs in the body. (7) That tuberculous disease of the bladder is not to be considered a contraindication to nephrectomy because it will probably heal later. (8) That a small tuberculous focus in the lung, provided the patient is otherwise well, is not to be considered as a contraindication. (9) That in cases of doubt as to whether a patient can stand an immediate nephrectomy, it is best to do a nephrotomy and leave the nephrectomy to a later date. (10) That the clamp method of managing the pedicle is contraindicated on account of the danger of hemorrhage upon removing the clamp. (11) That it is safest to remove the ureter with the kidney, as a persistent fistula may give trouble if it be allowed to remain in the body. (12) That the majority of these fistulæ tend to heal either after the removal of a deep suture or after the slow disappearance of tubercular disease along the ureter, which then becomes a fibrous cord. (13) That we may expect an increasing number of cures as our means of diagnosis improve and our surgical technic is carried out more scientifically and carefully.—*Medical News*.

MYOMECTOMY PER VAGINAM.—J. Riddle Goffe points out the value of myomectomy as contrasted with hysterectomy for fibroids, and the superiority of the vaginal method, carrying out his conservatism in gynecological surgery. He believes in removing the diseased portions but saving the uterus. Three illustrative cases are reported, in which the general rule is followed that uteri presenting small fibroid tumors are usually retroverted. He believes that the displacement affords the necessary conditions for the development of the tumors, and that the origin is very close to interference with the circulation as a cause. The facility afforded by the vaginal method of approach for the cure of the retroversion is an additional factor in its favor. There is also less danger, convalescence is smoother and simpler, there are no visible scars, and no danger of hernia.—*Jour. Am. Med. Ass'n*.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

MANAGEMENT AND TREATMENT OF TYPHOID FEVER.*

BY W. F. BOGGESE, M. D.

Professor Principles of Medicine, Clinical Medicine, and Pediatrics in the Kentucky School of Medicine.

In presenting this subject for to-night's discussion, I do not flatter myself that I can give you any thing distinctly new or original, but I am led to this selection by the hope that I might more forcibly call your attention to some fallacies that have existed, and still exist, in the minds of our brethren.

One of these fallacies is that typhoid fever is a "let-it-run-its-course" disease—an infectious disease of a self-limiting character. There is not, nor has there ever been, a phrase in medical nomenclature that has been as hurtful and misleading and discouraging to the young graduate, as well as the old moss-back and his patients, as the thought conveyed by the term "self-limiting." It carries with it the idea that the *vis medicatrix nature* is the only potent factor in a case. Self-limiting diseases are never diseases in which a physician should sit idly by with folded hands and wise countenance, and much complacent grunting, and let the various stages pass before his vision in orthodox succession; and if perchance the patient has sufficient strength and vitality to carry him through the rugged waters of infection, intoxication, ulceration, wasting, lowered vitality, etc., the physician, with much glee and much more self-adulation, exhibits the wasted and weakened unfortunate as a proof of his wonderful skill in pulling so severe and difficult a case back to life—not always to health. The fact is the patient lives as a monument to his

* Read before The Kentucky and Hospital Medical Society, January 9, 1902. For discussion see p. 90.

inherent vitality—the grace and goodness of God, the best and greatest of all physicians—as well as a demonstration of ignorance and malpractice of his medical adviser.

While the anatomical changes in the intestines, as a rule, when left to nature alone are represented by four stages, (1) the stage of infiltration or hyperplasia, (2) the stage of necrosis, (3) the stage of ulceration, (4) the stage of cicatrization, I must insist that these stages of pathological process, together with gastro-intestinal catarrh, marked prostration, rapid wasting, marked nervous symptoms, enlargement and infiltration of mesenteric glands and spleen, parenchymatous degeneration of the other viscera, are not necessary for a case of typhoid fever. The duty of the physician is to hold in check and prevent these pathological changes as much as possible, and the possibilities along this line are much more than the majority of physicians are willing to admit.

How can we best combat the rapid elaboration of the toxic principles, lessen these pathological changes, prevent this rapid wasting and exhaustion, and bring our cases to a speedier and better recovery? This can best be answered by a hasty review of the more modern and rational methods of general management and treatment. I shall only mention the things wherein I differ from the old orthodox methods that you and I were taught, and that you and I have practiced to the injury of our patients, and that some of you are still practicing with the same results.

Diet. First, let me advance this dictum, that possibly more patients are lost by under-feeding, which increases asthenia and prolongs convalescence, than by sensible and rational over-feeding. Until the profession gets away from the old idea that milk holds the first place—practically the anchor-sheet in typhoid feeding—it will continue to lose patients as before, and typhoid will continue to be the great stigma to the profession that it has been in the past.

I will not take up your time by a discussion of the theoretical reasons why sweet milk is not a suitable diet. I have discarded it almost entirely from my diet list. I am, however, very fond of buttermilk, and am delighted when we can get our patients to take as much as one quart per day. It is easily digested; it assists in overcoming kidney incompetency, helps the kidneys eliminate the toxins, as well as the effete and toxic tissue metabolisms. Nor does it furnish any pabulum for the bacillus typhosus, as does sweet milk, which, in the majority of cases, is seen by the increase of the toxemia. In addition to buttermilk, I am not content unless I get each patient to take from four to eight raw eggs per

day. A fresh raw egg furnishes the system every thing needed for its nutrition and sustenance. It is a simple matter to induce your patients to take the raw eggs. The numerous ways in which an egg can be made palatable and attractive to the most fastidious palate makes it a comparatively easy matter to give the raw eggs. In conjunction with the eggs, to insure the digestion of the albuminoids, as in the catarrhal condition of the stomach there is an absence of HCl, I always give five to fifteen drops of the dilute HCl in water after eating the eggs, thus giving the acid from four to six times per day, in as many glasses of water.

In addition to these I give my patients all the good nutritious soups I can get them to take, and a physician should not only know them all, but also how to prepare them. Of these soups we have a great number. A knowledge of the culinary art is to me as important as a knowledge of therapeutics. The ignorance along this line of both the laity and the profession is appalling.

Again, the diet can be enlarged by the preparations of the various custards, fruit jellies, and gelatins. In addition, if I find nutrition is still lagging, I employ the various liquid foods, such as liquid beef peptonoids, panopepton, the predigested foods, etc. If in this forced feeding you find the patient is not digesting it well, cut it out for a few days and then begin again.

Intestinal Antiseptics. While we are, with our present knowledge, absolutely unable to reach and destroy the bacilli and counteract their toxins in the tissues, we can and should, throughout the whole course of the disease, relieve and destroy all the intestinal toxemia possible. You can, by proper treatment, bring this to a minimum, as well as lessen the gastro-intestinal catarrh. Why should we not treat this catarrhal condition which plays such an important rôle and factor in the nutrition of our patients? I give throughout the whole course of the disease some of the following drugs: salol, bis. subgal., B-naphthol, urotropine, and occasionally capsules containing ichthyol, two grains, charcoal pv., four grains; and occasionally I use piperine and eucalyptol, with small doses of calomel. I have very little faith in the many other so-called antiseptics (intestinal).

Purgatives. You as well as I were taught that it was bad practice, culpable in the extreme, to give purgatives in typhoid. We were instructed to content ourselves with a simple flushing-out of the rectum. Woodbridge, in his enthusiasm for a specific treatment for this disease, has shown us that you can purge your patient at any stage of the disease

not only without hurt, but with benefit. I never hesitate at any stage of the disease to give either broken doses of calomel, Seidlitz powder, citrate of magnesia, or Rochelle salts, preferably in lemon-water. While it is ever best to use the bedpan constantly, yet we occasionally find a patient with whom it is impossible to use a bedpan. In such cases it is less hurtful to the patient to have him carefully lifted out upon a commode.

Antipyretics. While we all admit that the very best way of reducing temperature is by the cold bath, either after the method of Ziemssen or the more rigid method of Brand, yet so many obstacles are to be overcome in the daily application in our private practices that they are made impracticable. How impossible it would be to attempt such things in our great typhoid element! A portable tub, three or four intelligent attendants, constant watchfulness, and educated nursing are all necessary. We must rely upon oftentimes unintelligent cold sponging or the scientific application of the cold pack. It has been my experience to find in certain cases you can get just as good if not better results by the use of the hot pack. This is always more grateful to the patient than the application of the cold, and with the more rapid evaporation from the surface we get as much refrigeration.

As to the use of internal antipyretics, I will say I do not hesitate, in many of my private cases, to use some of the antipyretics. They oftentimes have a most beautiful and satisfactory influence in reducing temperature, calming the nervous system and thereby strengthening the heart, besides possessing some antiseptic powers. It is true that they do in large doses, and even in some susceptible patients in small doses, depress the heart. This, however, can be avoided by proper stimulants—such drugs as phenacetin, antikamnia, phenalgin, and acetanilid, etc. But the best of all such drugs, the one freest from all objectionable features, is thermol. I have used it for more than a year in almost every case, with uniformly good results.

There is one thing that physicians oftentimes overlook, and that is the necessity of insisting upon all typhoid fever patients drinking large quantities of good, pure, sterile water. This is a rule that is oftentimes overlooked, not only in this disease, but in all infectious diseases. The water lessens emaciation, promotes diaphoresis and diuresis, etc. In typhoid, particularly where the kidneys play such an important rôle in the elimination of the toxins, both typhoid and intestinal, large quantities are especially indicated.

Allow me to mention just two of the complications of this disease that are not infrequently met with, viz., hemorrhage and cardiac asthenia. Hemorrhage from the bowels occurs in from three to five per cent of our cases, varying from a slight oozing to large and frequent bloody stools. This symptom is best met by absolute quiet and rest, withdrawing all food for ten to twenty-four hours; hypodermic injections of morphine, antiseptic ergot, ergotal, etc.; cold to the abdominal surfaces, salt solution, either normal or stronger; ice-water enemata. Cardiac asthenia demands alcohol, strychnia, citrate of caffein in full physiological doses; elevate the foot of bed, and absolute quiet and rest. Digitalis is a drug from which you get little effect after granular or fatty changes have taken place in the cardiac wall. If you rely upon digitalis after this condition is present you will be very much disappointed in the use of the drug.

This is too large a subject to cover in one paper. I have endeavored to call your attention to a few of the more modern and rational ideas. Let me say this in conclusion, that a routine treatment and course in every case of typhoid, just because it has been the custom from time immemorial to do so, is most culpable. Do not trust too much to nature or the *vis medicatrix nature*, but, knowing your pathology from stem to stern, use your own good reasoning powers and treat each case from a rational standpoint.

LOUISVILLE.

CLINICAL MEMORANDA OF A FEW RECTAL CASES.

BY JOHN B. ENRIGHT, A. M., M. D.

Professor of Anatomy and Instructor in the Laboratory of Anatomy in the Kentucky School of Medicine.

CASE I. Railroad man, forty years old. Had been afflicted with hemorrhoids for the past ten years. His were not either the external or internal type, but an admixture of both. He had four of them, and at intervals for about two years had been losing considerable blood; likewise his suffering was almost constant, and at times intense. For years he has been a steady user of whisky, and has a rather weak heart. However, no valvular lesions are present, nor was any albumen found in urine. He was averse to taking chloroform, and I did not insist on its being given. After thoroughly cleansing the skin adjacent to the anus I injected (at four points around the lower rectum) thirty minims of a four-per-cent solution of muriate of cocaine. In ten

minutes I tried to divulse the sphincter, but the analgesia was not sufficient. Five minutes later I made a second attempt, but still there was resistance and pain. I then temporarily abandoned this, and seized each hemorrhoid, seriatim, with a pair of forceps, and while an assistant held it I divided the skin at its base around to its junction with the mucous membrane on the opposite side. I applied silk ligatures to two of them in the usual way, by piercing the center of each one with needle armed with double thread and tying each half to itself. On the other two I used silver wire. I did not pierce these, but encircled each one at its base with a wire ligature and made one turn or twist. Next I cut both ends of wires off so that they were about one inch long. I then seized the two ends with a pair of forceps and twisted them until they were quite taut. At this juncture I divulsed the sphincter and to a considerable size, notwithstanding strenuous objections on the part of the patient, due to pain. Having accomplished this, I put a small piece of gauze on the free ends of the twisted wires so that they would not do any injury to the adjacent skin, which had been dusted with iodoform, and a T-bandage completed the dressing. In forty-eight hours I removed the dressing and threw five minims of a two-per-cent solution of cocaine into the base of each wired hemorrhoid, and again twisted the ligature tighter. I repeated this procedure forty-eight hours later. A perfect cure resulted. The tightening of the silver wire every forty-eight hours shortens the time required for the separation of the hemorrhoids from the body, likewise the period of pain is lessened and recovery takes place with greater rapidity.

CASE 2. Clergyman, thirty-five years old. Three external hemorrhoids, and one small mass wholly within the grasp of the sphincter. The sphincter was also strongly and spasmodically contracted. The man had suffered for years, dating back to his seminary life, and as in recent years he has been compelled to ride horse-back a great deal his leading symptom, pain, had increased, with at times great itching and loss of some blood. Patient was duly prepared, chloroform administered, and sphincter well divulsed. A feature of this case was that no matter how thorough the anesthesia the sense of resistance remained. I cut off the external hemorrhoids, and from only one had I any hemorrhage; the application of a ligature stopped this. Not having any silver wire at hand, I stuck a needle armed with a double silk thread through the center of the internal mass and tied each half in the usual way. Case went on and made a successful recovery, but

convalescence was slow. The external ones healed promptly, but the inner masses were tardy in sloughing off and very painful during the immediate days following the operation.

CASE 3. A physician, thirty years old. Had been annoyed somewhat for two years. Examination revealed one small external and another quite large hemorrhoid of the mixed type. From this latter one he lost some blood usually at every defecation. Like most doctors, he did not wish to take chloroform. So in lieu of taking this, thirty minims of a two-per-cent solution of muriate of cocaine were thrown into the tissues adjacent to the hemorrhoids, and a liberal drink of whisky was taken at the same time. I excised both of them, and the application of hot water completely controlled what little hemorrhage there was. I was unable to divulse sphincter because of the imperfect anesthesia, the cocaine not giving the desired results. Sphincter was not strongly contracted, and the patient went on and made a rapid recovery. He experiences no pain, and has no more bleeding during the act of defecation. I report this case to show another instance of how unsatisfactory local anesthesia is in the great majority of these cases.

CASE 4. Single lady, twenty-eight years old. This lady had suffered for five years, and did not know what her ailment was until recently. An examination, however, brought out the fact that she not only had external hemorrhoids, but internal ones as well. She and her aunt called at my office and an examination showed three large external hemorrhoids, and a sphincter so strongly contracted that the attempted introduction of a finger or speculum gave her so much pain that the examination could not be completed. I sent her to Sts. Mary and Elizabeth Hospital, and after some preliminary treatment she was anesthetized by Dr. H. R. Bezat. The sphincter was divulsed. After the divulsion I was able to complete the diagnosis. Three large hemorrhoidal masses were situated wholly within the anal orifice, and a catarrhal condition of the rectum, sigmoid flexure, and likely involving descending colon, as an excessive quantity of mucus came down, notwithstanding the rectum had been previously thoroughly douched.

After completing the diagnosis, I let her rest for one week and then operated. I excised the external ones. The base of one was disposed to persist in oozing some blood that hot water failed to entirely check; but the application of the actual cautery promptly and completely checked it. Next I applied Kelsey's clamp to one of the

internal masses, and with a pair of scissors curved on the flat clipped off the redundancy of tissue and seared the open surface, after which I removed the clamp and had no hemorrhage. I dealt with the two remaining masses in this manner with like results. In one week the patient was walking around; in two weeks she went home, and in three weeks was able to walk ten blocks. Four weeks after the operation she was apparently well. With the exception of the colitis, which is getting better, defecation occurs without pain.

LOUISVILLE.

Reports of Societies.

THE KENTUCKY SCHOOL AND HOSPITAL MEDICAL SOCIETY.*

Stated Meeting, January 9, 1902, the President, William A. Jenkins, M. D., in the Chair.

Unusual Results of Gonorrhea. Dr. W. F. Bogges: This case is one which has been of considerable interest to me, and I trust it will be interesting to the Society. The patient, Mr. K., I saw for the first time in August last. He is twenty-six years of age. Six years ago he contracted gonorrhea, and at that time was exposed for six or eight hours in a blizzard in Pennsylvania, and following this exposure had what he terms rheumatism, which I take to be gonorrheal rheumatism. He was laid up in an infirmary for eight months. He got up with ankylosis of the hip-joint and some other troubles which we will show you.

I saw him first in August, at which time he had been confined to his bed for four and a half months. At the time I saw him he had been treated by quite a number of physicians for rheumatism, and he was emaciated to a mere skeleton. He was unable to stand on his feet. He suffered excruciating pain upon the slightest movement, and the pain appeared to be due to a luxation of the spinal vertebræ, so that whenever he attempted to move it would press upon the interspinal nerves at their exit, causing the most excruciating pain.

I took him to the St. Joseph Infirmary and called Dr. Ap Morgan Vance in consultation, with the possibility of putting on a brace in order to relieve the condition of the spine.

The patient now being stripped to the waist, upon examination you see some old scars which show that he has had some destruction of the clavicle. We can elicit no positive history of syphilis from the boy, and

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

yet bone disease of the clavicle is always suspicious of specific disease. My attention was called to this by an eminent surgeon, and in looking up the question I find it is a fact that, unless there is tuberculous disease of the clavicle, involvement of the bone here is always suspicious of syphilitic infection.

I at once put this boy on full doses of the iodide of potassium, with inunctions of hydrargyrum, and in about a week's time he was working about the ward, and in ten days he left the infirmary, walked to the car, and went to his home in New Albany, Ind.

The case is interesting in several respects. First, the wonderful amount of ankylosis following gonorrheal rheumatism. If you will notice, he also has an ankylosis of the jaw; his mouth can be only slightly opened. He has ankylosis of the hip-joint and manifest shortening of possibly two and a half inches of that leg. It is not a true shortening of the leg, but is due to adduction from the ankylosis. Shortening is really very slight, it being more a manifestation than a true shortening of the leg. This is an interesting feature in itself. Another interesting point is the rapidity with which he improved under the treatment mentioned. His general health is greatly improved; he has gained in strength and in flesh, and he does not suffer from pressure upon the spinal nerves and is almost free from pain. Ankylosis of the jaw is an interesting aspect of gonorrheal rheumatism. The only evidence of syphilis we find in the case is necrosis of the clavicle. The case was undoubtedly specific, because of the quick response to enormous doses of iodide of potassium and mercurial inunctions. He is in better health to-day than he has been for six years. When I saw the boy he was confined to his bed and had been treated with the ordinary anti-rheumatic remedies for four and a half months, getting worse all the time, with extreme emaciation, and in less than ten days' time, under anti-syphilitic treatment, he was able to go home from the infirmary. This case is another evidence of the wisdom—when you do not know what else to do—of giving iodide of potassium.

Discussion. Dr. Chas. Moir: There are several peculiar features about this case. One is the fact that if this is a necrosis of the clavicle due to syphilis, why he has not had some manifestations of the throat. In rare instances, however, we do have decided lesions of syphilis without throat manifestations. The ankylosis which is present would be easily explained by the gonorrheal rheumatism. You will notice that the boy

has a lateral curvature of the spine. The other conditions we find about the joints are common results of aggravated cases of gonorrheal rheumatism. The fact that the patient responded so readily to kali iodi would seem to me to be positive evidence that the trouble was syphilitic. It is probable, however, that the result would have been the same if the trouble here was due to gonorrheal rheumatism, because of the well-known effect of iodide of potassium as an eliminant. In some instances the iodide of potassium is tolerated in incredibly large doses. I have a patient now to whom I am giving one hundred and fifty drops of the saturated solution three times daily, which seems to be well tolerated. The disease was in the tertiary form when the patient applied to me for treatment.

Dr. H. Orendorf: This case only brings out the fact that we must first find out, if we can, what we are treating. In other words, Dr. Boggess is to be congratulated upon making a diagnosis. Had he not made a correct diagnosis, doubtless he would have followed in the same line traveled by his predecessors.

The essay of the evening, "The Management and Treatment of Typhoid Fever," was read by Walter F. Boggess, M. D. [See page 81.]

Discussion. Dr. Wm. A. Jenkins: The prevalence of typhoid fever renders the thorough and scientific knowledge of its management and treatment a necessary requisite to the successful general practitioner. There are three primary principles underlying the general treatment of typhoid fever. First, enforced rest in bed; second, a liquid diet, and third, intestinal antisepsis. Some doubt may arise as to the best means of obtaining these results, but certainly there can be no dispute as to their desirability.

Enforced rest: The most of our patients with typhoid fever are bed-fast from the first because they are too sick to be anywhere else. Nevertheless, there is a certain per cent of irregular or atypical forms in which the patient is permitted to drag around, wasting his strength and vitality when he should be in bed. Again, unless the physician gives instructions to the contrary, certain individuals will get out of bed before convalescence is thoroughly established, which adds a new element of danger; hence we should say, enforced rest in bed until the attending physician rules otherwise.

Liquid diet: The importance of a liquid diet is recognized by all. There are a few cases, we know, reported and verified by post-mortem

examinations, in which there was absolutely no intestinal involvement, but these cases are pathological curiosities rather than working rules for the general practitioner. In by far the greater per cent of all cases the primary and chief point of involvement is the intestinal canal. Intestinal digestion is badly deranged, stomach digestion secondarily so, hence we should say, a liquid diet. Concentrated nutriment, if necessary predigested, at any rate digestible, should be insisted upon. It should be sufficient in quantity to nourish the patient, but not enough to leave behind a residue to ferment, decompose, and assist the toxins of typhoid bacilli in producing systemic disturbances.

Intestinal antiseptics: The intestinal tract being the chief point of involvement in the greater per cent of all cases, we readily see the importance of maintaining rigid intestinal antiseptics. A great many of the drugs we use are directly germicidal in action upon the bacilli, again others prevent their multiplying and render inert the toxins which they have manufactured. Hence a great many of these toxic and systemic symptoms and sequelæ which years ago were so prevalent we now avoid.

But after we have used our best endeavors along the lines already laid down, there are still two factors in the treatment of typhoid fever which present themselves to us with the utmost regularity, viz: reduction of temperature and preservation of the heart's strength. For the reduction of temperature we depend chiefly upon hydrotherapy; rarely in private practice do we resort to the full cold bath, depending rather upon sponge baths, always adding a little alcohol to the water, supplementing these measures by using abdominal and head coils. Ordinarily we find these measures effectually reduce the temperature and do not produce systemic disturbances, and I believe serve as a stimulant to the muscular and nervous systems.

The heart in typhoid fever is subjected to a trying ordeal; the blood is loaded with toxins, tissue detritus, and even, occasionally, the bacilli themselves are found in the blood. There is a greater tendency on the part of the blood to form fibrin, clot, and even form thrombi late in the disease. The heart walls themselves are liable to undergo granular or even fatty changes, and the endocardium may take on inflammation and be followed by valvular leakage, the real outcome of which is not produced until months or even years after the subsidence of all fever symptoms. Digitalis, whisky and brandy are useful in maintaining heart strength, but by far the best single drug is strychnine, either the sulphate

or nitrate, the size and frequency of the dose to be regulated according to the judgment of the physician and the condition of the patient.

Dr. Chas. Moir : Give me an intelligent trained nurse in a case of typhoid fever and I will guarantee you almost absolutely to take the patient through the attack safely.

I am sorry that Dr. Boguess did not bring out more explicitly at what temperature he would give antipyretics. It has been my rule in practice to pay little attention to the fever unless it goes over 102° F. Nearly all of the well-known antipyretics are depressing, and I am afraid of them. I have never been so unfortunate as to lose a case of typhoid fever, and believe I have had my share of them.

I agree with the essayist in regard to the inadvisability of using sweet milk as a diet in typhoid fever. If I want to have trouble with a typhoid fever patient I give him sweet milk, and trouble will very promptly materialize. This has been my personal experience. I saw a case to-night, just before coming to the meeting, a gentleman who is in the third week of typhoid fever. I have prohibited the use of sweet milk in this case, but to-day, as he said he felt much better, he begged his wife to give him some milk, which she did. If a trained nurse had been in attendance he would never have gotten sweet milk without my consent. His abdomen was markedly tympanitic to-night, which I attribute to his being given the milk.

For controlling hemorrhages of typhoid fever there are several good remedies. Gallic acid has proven better than any thing else I have used. It is slow of solubility and does not perform its duty until it reaches the ileum, and it then has the effect of controlling the hemorrhage.

I would use digitalis in selected cases, but I have never found conditions present in typhoid fever where I thought this drug was indicated. I use alcohol, but not indiscriminately. I use hydrotherapy when the temperature goes to 102° F.

Dr. W. H. Wathen : A few words in relation to the use of milk. I hardly understand why, as suggested by Dr. Boguess, that buttermilk should be so much superior to sweet milk, either in direct effect as to its nutritional properties, digestion, or, as he claims, in forming a better pabulum for the action of the germs of typhoid fever. It would appear to me that there would be little difference between buttermilk and sweet milk in relation to the amount of solid matter that could furnish a medium in which the germs might develop.

I remember an instance where a person was treated for typhoid fever by one of our most scientific physicians, the diagnosis having been incor-

rectly made, the person not knowing that he had typhoid fever until some time after he had left his bed. He had eaten imprudently and was suddenly taken with great distension of the abdomen; he had at the time a pulse of sixty, which within an hour reached one hundred and twenty to the minute. This subsided, but he had a persistent diarrhea which lasted for several months, upon which no medication had the least effect. He was in Cincinnati three months afterward, and having taken many remedies with no effect, suffering intensely, he met Dr. Thaddeus Reamy and described his condition. The doctor said: "If you will stop all medication and take no kind of diet but sweet milk, taking as much as half a gallon to a gallon and a half a day, you will get well." The party began immediately, while at his hotel in Cincinnati, drinking milk. In twenty-four hours he felt decidedly relieved from the intense pain which he had been suffering; in forty-eight hours the diarrhea was greatly lessened, and in seventy-two hours his actions were infrequent and were becoming solid. In five days he had no pain, no diarrhea, and in ten days he was perfectly well and has remained well since, impressing me with the belief that of all diets for typhoid fever sweet milk must be one of the best. It forms fecal masses which are just as little irritating to the surfaces of the bowel as any food we can take; but it seems to me that among the best things we can take in typhoid fever during the active stage are the pre-digested products, such as panopepton, liquid peptonoids, etc., and by this means we can for several weeks if necessary keep our patients alive and sufficiently nourished by the use of these remedies by the mouth or by the rectum.

As to stimulating the heart: I do not believe digitalis has ever been of any benefit, and certainly I have never gotten any benefit hypodermatically or otherwise from the use of digitalis. I would depend upon strychnine, hypodermatically administered preferably, but when given by the mouth its effect may be equally good, and I would not give it in one sixtieth or one thirtieth grain doses, but in doses of one twentieth of a grain, repeated as often as the indications demanded. Many years ago I discontinued the use of strychnine almost entirely because I could get no benefit from it. I used it then according to the belief taught as to dosage, viz: one fortieth, one sixtieth, or one nintieth grain. Finally I began to use it again, and I give it in one twentieth grain doses three times daily, and in some cases four, five, and six times daily, and I have given as much as one tenth grain every three hours for one, two, or three days, hypodermatically, and I have never seen any pathological effect of

strychnine. So, then, it is absolutely an innocent remedy with any degree of caution in its use.

The remarks of Dr. Jenkins in relation to intestinal antiseptics, when he speaks of remedies that will prevent absorption of the toxins formed in the bowel during typhoid fever, I think he meant to say not the absorption of toxins but the prevention of toxins by bacterial growth. When toxins are formed there is no remedy, so far as I am acquainted, that has any antagonistic effect by destroying them by direct contact when in the system, but we do have remedies that will destroy the production of toxins or will destroy the action or multiplication of the germs.

One question in the treatment of typhoid fever occurs to me here—a complication of typhoid fever that probably some of you have seen—perforation. Only a few years ago no one ever performed an operation for the purpose of curing the perforated bowel in typhoid fever, but now we find that it is an accepted principle that where we get to a patient sufficiently early it is the duty of the surgeon to perform a laparotomy and try to save the life. Now, I am glad to say that Dr. William L. Rodman, who only a few years ago lectured in this hall, operated on a patient in Philadelphia almost in collapse who made a perfect and uninterrupted recovery. I read a report of the case, and he described it to me not long ago in my office. He said he really thought it foolish to operate, as the patient was so nearly dead when seen, but as there was no hope without it the operation was performed, and he was surprised at the beautiful result. Therefore we should always, where there is any possibility of the patient recovering from the effects of the operation, give him the benefit of a laparotomy when there is a perforation.

Dr. H. Orendorf: How unfortunate it is that all of us can not look upon the sick alike; if we did we would not be confronted with that old aphorism, “doctors never agree.” Why does not Dr. Wathen add a little lime-water to his milk? Why do not Drs. Wathen and Boggess take bean soup and add a little water to that? And since sepsis of the intestine is the cause of typhoid fever, why do we not prevent sepsis and avoid this enormous array of symptoms altogether? Why allow a patient to be septicised if we know the cause of the sepsis? First, we should direct our attention to the intestine; this is the leading point in this disease. Dr. Boggess said nothing about guaiacol and benzosol. If we can asepticise the intestine and get rid of the cause of the toxins, and get rid of the bacilli which produce the toxins, we will not have any perforation and operation therefor.

Dr. J. T. Dunn: There are two conditions in which the surgeon is called upon in the course of typhoid fever; one is for the arrest of hemorrhage as a result of ulceration, the other is in perforation. We find that statistics show that six per cent of all cases of typhoid fever have perforation. Out of this six per cent, ninety per cent die without operation, and with operation eighty per cent of them die, leaving us ten per cent for the fruits of our labor. If that be the case, then it seems to me we should watch carefully for symptoms of perforation and operate at a time when operation is advisable; that is, within the first twelve hours, or at the outside twenty-four hours. The symptoms of perforation, as I understand them, are sudden drop in temperature, severe and sudden pain beginning in the right iliac region, with considerable shock and depression. These symptoms should call our attention to the fact that there is a perforation, and preparation should be made at once to operate, unless there is so much shock that it is not advisable to operate.

I understand the case in which Dr. Rodman operated was a very desperate one, probably there can be no more so, and he saved the patient. Why should we not do the same? Operation can be done through the median line, or through a lateral incision; preferably through the median line if you are sure the perforation has opened into the abdominal or peritoneal cavity. The opening in the intestine should be sought and closed with Lembert sutures, the peritoneal cavity wiped out well with sponges and irrigated with saline solution. There may be multiple perforations. If you find that condition of affairs to exist, you will not be able to close the openings by suture, perhaps, and then resection is necessary. Of course it would take a great length of time to unite the open ends of the intestine, and rather than to waste the strength of the patient to subject him to this operation, or even the use of the Murphy button, it is better to establish an artificial anus, and treat that after he has recovered from the typhoid fever, and when he is in better condition. If there is an abscess in the neighborhood of the ulceration or the perforation, if it has not ruptured into the peritoneal cavity, then an incision should be made in the right iliac region over the most prominent portion of the infiltration and drainage established, thus preventing rupture into the peritoneal cavity.

As to hemorrhage from ulceration: It is a very difficult matter to locate this at times, to know exactly from what point the hemorrhage comes, but in any event the abdomen should be opened and the hemorrhage arrested, either by cauterizing or by suture.

Dr. Geo. Jenkins : After three years' observation in the wards of the City Hospital I have been led, by that limited experience, to differ somewhat with the conclusions of Dr. Boggess, as stated in his paper, especially in regard to the administration of intestinal antiseptics. I have seen many times the cruelty of the old method of management illustrated ; that is, giving a patient with typhoid fever nothing, or, at best, a little water or a little milk. Our post-mortem room has held the result of several of these conditions. It is well to impress this upon students and physicians alike. In the first place, the cardinal principle in the treatment of typhoid fever is to keep the bowels open. I find if a patient with this disease goes over forty-eight hours without an action of the bowel, at any stage of the disease, the temperature goes up, and he becomes delirious ; in some cases I prefer enemata and in others broken doses of calomel to keep the bowels open. The high temperature has proven amenable to treatment by sponge baths. At the hospital we use what is called the puddle bath ; that is, take a rubber sheet and roll blankets in each edge of it, water is then placed in this rubber sheet, and the patient allowed to sink down into it. This has been found superior to the administration of intestinal antiseptics, and the temperature is controlled by this means. For internal administration I prefer strychnine and alcohol, although digitalis is recommended in those cases in which the heart begins to get weaker previous to the time when degeneration begins, first granular, then fatty. Before granular degeneration has set in digitalis is an admirable remedy.

Dr. C. W. Hibbitt : The first thing that strikes us in the management of typhoid fever is the diet upon which we shall put our patient. Dr. Boggess suggested the use of four to six eggs in the twenty-four hours. I have never used that number ; would be afraid to. We know that when high temperature is present digestion is retarded, and I would be chary about the use of six eggs a day where the patient's range of temperature is from 102° to 104° F. Buttermilk diet is excellent, and I have had good results with the use of sweet milk mixed half and half with Vichy. This takes the greasy taste away and is much more agreeable to the patient than milk alone would be.

As regards the temperature, I find that the lukewarm sponge bath answers the purpose in the majority of cases, following this, of course, with an alcohol rub, which prevents depression to a great extent. If there is much depression I use alcohol internally.

With reference to intestinal antiseptics : I have found calomel, one twentieth grain, in combination with carbonate of guaiacol, sulphocarbonate of zinc, and a little charcoal acts admirably.

Dr. A. D. Willmouth: If there is any thing in the line of medical practice which has changed in the last few years it has certainly been in the treatment of typhoid fever. From what I can learn from older practitioners, the former method was to give the patient opium until the bowels were practically locked up for a period of ten to twenty days, the patient lying in a low muttering delirium, coated tongue, sordes on the teeth, etc. From that we have changed to giving intestinal antiseptics, plenty of water to drink, and now we hear the older men say that they do not see the typical cases of typhoid fever that they used to. It seems to me the disease is the same that has always been seen, but its course has been modified by more intelligent treatment.

As to the use of antiseptics: Cold water—hydrotherapy—is the best method of treatment. We can stop it when we get ready, and if we see we are getting a bad result we can quit at any time we choose, while, if we are giving large doses of coal-tar derivatives, if we are getting a bad effect it can not be helped until we give some of the drugs used to counteract this effect.

As to the mode of giving baths: I have seldom used the pack, always relying upon the sponge bath in connection with the sponging of the patient with ordinary plain, tepid water and the use of either alcohol or what is known as foreshot.

As to the use of internal antiseptics: I like salol and thermol best. These drugs are readily taken by the patient and cause little disturbance of the stomach, and may be given, if needed, throughout the entire course of the disease. For moving the bowels calomel is always in order; it clears out the detritus and you get the alimentary tract in better condition to absorb other remedies that may be given.

As to feeding: I like buttermilk far better than sweet milk. Sweet milk will produce a great deal more tympanites than buttermilk, and where tympanites is great it is aggravated by giving sweet milk.

As to heart stimulants: I think strychnine stands at the head of the list. My experience has been that digitalis given by the mouth produces nausea and vomiting, and it is only a short time until the stomach is so deranged that it will retain nothing. If digitalis is given hypodermatically little or no results are obtained. Strychnine stimulates the heart better than any thing else, and, like Dr. Wathen, I give it in full doses. One thirtieth to one twentieth grain every four, or even every three hours, has served my purpose better than smaller doses.

Last, but by far not least, is an experienced trained nurse. Possibly some of you, like myself, have had some experience in the country, far

from any other physician, where you have to be doctor and nurse too, and under these circumstances the services of an intelligent trained nurse will be more fully appreciated.

Dr. J. W. Irwin : I suppose everything has been said about typhoid fever that can be said. Has it ever occurred to you that when everybody has a treatment for a certain disease that there must be something wrong? If we had a specific treatment for typhoid fever, as quinine is almost a specific for malarial affections, then we would not have these dissensions. If every case of typhoid fever died without treatment, then we might easily recommend this treatment or that treatment ; but, fortunately for the physician, there are many cases of typhoid fever that survive in spite of his remedies. In order to know what sort of treatment is necessary in a case of typhoid fever, as in all other diseases, we should first bear in mind the pathological anatomy. What is going on in typhoid fever? Is it a disease within the intestinal canal? Certainly not. It is a disease inflammatory in character of the glands and patches of Peyer and the follicles of Lieberkuhns, etc. Let us see. We have no concern with the germs within the intestinal canal ; but we have concern with a poisoned state of the whole system. If it is this state with which we have to deal, and bearing it in mind we can formulate some sort of treatment suited to the conditions present, we may use all forms of antiseptics in the alimentary canal and do no more than wash the germs away or destroy them. It is those in the interstices that are doing harm. Typhoid fever, being a systemic disease, that is, it affects the whole system, it follows that the system must be laboring under the effect of three distinct poisons : first, the normal poisons, leucomaines ; secondly, the abnormal poisons, ptomaines, the result of dead tissue, and, lastly, the toxalbumens, the result of bacterial change. Assuming that these leucomaines, ptomaines and toxalbumens are in the alimentary canal, and not in the walls of the intestines, not in tissues of the body outside of the alimentary canal, they can do no harm. Hence we should not look in horror at what is within the alimentary canal, but we should look at those in the system. Bearing these facts in mind, we will readily see that one organ after another becomes affected, one tissue after another shows weakness, and most people have weak organs and weak tissues, which are frequently the first to become diseased. Therefore, I do not see how we can formulate any sort of special treatment for typhoid fever and say that this is the proper treatment. We must treat the case as we find it. If our patient has a dilated and weak heart we

must treat the heart. We should keep the fact in mind that there is a local inflammatory change going on in certain parts of the alimentary canal, and that this is only a local manifestation, just as the eruption of the skin is only a manifestation of scarlet fever, and we will treat the systemic disease. We may remove the offending matter, whatever it may be, from the alimentary canal, and the old practice was to administer calomel at first. This method was said to be useful in clearing the *prima viæ*. In later years we know it is more useful than any other remedy in combatting inflammatory change. It is a great remedy in the early stages of inflammation because of its salutary effect; but, later on, no other laxative will answer the purpose quite so well as castor oil. Any laxative that will cause irritation in the *prima viæ* will increase the fever. Later on in the disease, when cybala form in the sigmoid flexure, the fever may run up four or six degrees.

As to what treatment should be used. If we could put some antiseptic into the alimentary canal that would destroy the ptomaines and toxalbumens there and in the system we might accomplish something useful along that line, but we are not able to do this.

Touching the question of feeding: What shall we give? Will any body pretend to say that we can administer milk to every case of typhoid fever? Certainly not, for there are many cases that can not retain even a teaspoonful of water at the beginning of the attack. To give milk to such a patient would only have the effect of making him worse. In the administration of sweet milk we must remember that it has more curd, more cheese, than buttermilk.

How should we administer food? Just as the patient can take and absorb it. We may render it into peptones. It is far better to give fresh foods. I can not agree in the use of artificial foods, because it is hard to tell how much nutrition they contain. When fresh articles fail to agree with the patient we may have to resort to the use of artificial foods. The average amount of food to be given a typhoid fever patient, if he can tolerate and assimilate it, would be about two quarts of some soup, properly strained so as to avoid any hard matter, and about one quart of milk in twenty-four hours. This food, given in small quantities, alternated, would be more agreeable to the patient than to give one kind all the time. Sometimes food has to be given in small quantities; perhaps one third of the quantity stated would be quite enough for some patients. Some can not take milk, and must be nourished by simply the administration of soup alone. Beef tea is of very little value in typhoid fever.

In typhoid fever, where there is no complication, where the disorder is merely running its course, any value in any remedy in the way of medicine is of very little value. The most we can do is to clear the *prima viæ*; we can not cut short the disease by any kind of treatment. Certain complications may sometimes be anticipated and prevented. The Brand treatment has been heralded from time to time because of its salutary effect in reducing temperature and also in bringing about sleep. The Strowbridge treatment has had its advocates, but has not proven so successful as the Brand treatment. The Brand treatment is of more benefit, because it reduces the temperature and does away with the necessity of administering medicine for that purpose. In attempting to formulate any kind of treatment, we would first have to say that typhoid needs no treatment other than simply opening the bowels, carefully regulating the diet, and keeping the body at rest and clean. We need not concern ourselves much about the hyperpyrexia, because when the temperature does not exceed 104° F. we need not be alarmed. It is nature's way of ridding the system of certain products that should be destroyed. But if we find changes in the heart-muscle, then we may make cold applications, we may substitute local heat, or we may use alcohol and tepid water. We should not move the patient about much if we suspect that hemorrhage or perforation is about to occur, as in those cases the less we move the patient the better, just as would be true in any other inflammatory disease. Rest is necessary. If we do not care to use water locally when such complications arise as would require turning and moving the patient, we may use guaiacol, with equal parts of oil of cloves, five or ten drops over the iliac region, and in a short time there will be a fall in temperature of from three to five degrees, in proportion to the amount of guaiacol used locally. If too much is used it will be followed by a rigor. In cases of hyperpyrexia the patient should not be disturbed more than is necessary.

In hemorrhage of the bowel the best means of combatting it is by the use of opium. We have no remedy equal to opium in the treatment of tympanites or in the treatment of the hemorrhage of typhoid fever, and we must also administer opium in perforations. The surgeon may come into the case later, but in the meantime we can not allow our patient to suffer. Under the opium treatment about two per cent of perforations have survived without surgical operations. If nephritis occurs we must treat it as we find it. We may have to change the diet, and give such remedies as will not injure the kidneys. While all these

changes are going on the patient is growing weaker, the heart-muscle is undergoing certain changes ; then as to the use of digitalis or strychnine, we might as well not administer such remedies, they can have no effect. The administration of alcohol is indicated as a stimulant and a food. Many people live for two or three weeks on alcohol alone. When it begins to reduce the temperature it is not well to carry the dose much further. As to the quantity of whisky to be administered in twenty-four hours, it is a matter entirely to be determined at the bedside. Some patients will do very well on four ounces, others will require six or eight, others may take as much as twenty to thirty ounces of whisky in twenty-four hours. Statistics show that four and a half to six ounces of alcohol taken in divided doses in twenty-four hours becomes nutrition.

Touching the question of remedies : There is no special remedy for typhoid fever. We must treat the conditions as we find them ; we must treat the symptoms as they arise. There is no special feeding for typhoid fever other than that mentioned as generally indicated. It would not be well to administer solid food, as digestion is usually very weak, but if the stomach digestion is good we may at any time give such food as it will digest so that no solid mass will pass down to the local manifestation in the intestines, least hemorrhage and perhaps perforation should occur. Many patients have been known to survive typhoid fever where they have been allowed to eat almost any thing they wanted. Therefore I agree with Dr. Boggess that if the patient can digest eggs they may be given.

Finally, nurse the patient well. See that every thing taken into the stomach is of proper quality and quantity, keep the body cool and clean and the room well ventilated, support the patient's strength by the use of stimulants, and keep him as quiet as possible, for rest in typhoid fever is just as essential as it is in any other inflammatory condition.

Dr. J. B. Enright : There are two old-fashioned drugs that I have been listening to hear mentioned, but they have not been sounded. One is carbonate of ammonium, the other is turpentine. These are remedies which can be used at certain times in typhoid fever with as much benefit as any drug that has been mentioned to-night.

In reference to the use of milk, I fully agree with Dr. Boggess, especially as regards the use of milk that we get in the city. In the country, milk may be all right, but in the city it is different. The milk we use here is drawn about one or two o'clock in the afternoon and lies around all the afternoon, is churned all night in a wagon, and the next

morning we get it—and this is the stuff we use, and call it milk. For several years, whenever I am called in to attend a child that has some disturbance of the alimentary tract, the first thing I do is to stop the use of cow's milk and substitute some artificial milk. The one I am partial to is Horlick's.

In regard to the use of eggs, I have found few patients who would eat them and seem to do well. They are unable to take them.

As to the use of saline solution as mentioned in the paper : I will ask for information regarding the safety of throwing saline solution, even though a normal constituent of the blood, directly into the venous current. I would be inclined to limit the use of salines to the connective tissue of the body, and if it became necessary to throw fluid into the veins I would use hot carbonate of ammonium (water of ammonia), because if there is any one thing that is well known, so far as the physiological action of the preparations of ammonia, it is that they tend to liquefy and keep in this condition the blood in the vessels. It prevents the production of fibrin. The great majority of cases of typhoid fever that die of heart failure die of clot. Occasionally death occurs from meningitis, etc. There is a tendency to the formation of fibrin in the blood-vessels. Hence, the significance of giving carbonate of ammonium as one of the remedial agents in typhoid fever. After the bowels have been thoroughly flushed out I am in the habit of giving carbonate of ammonium from the start, watching the first sound of the heart, examining the heart daily. Whenever the first sound begins to show weakness I give whisky in the manner outlined by previous speakers, for its effect. It will require more alcohol in some individuals to get the proper effect than in others.

In reference to the use of turpentine : In cases of ulceration or where there is a tendency to diarrhea, turpentine is certainly a good remedial agent. It does not depress the heart, on the contrary it is a cardiac stimulant. It not only does good by its action upon the heart, but by its action upon the bowels it has an astringent as well as a stimulating effect upon the granulations that are in the ileum.

I am aware that one of the antiseptic solutions mentioned by Dr. Boggess is forty per cent carbolic acid and sixty per cent salicylic acid. I would like to know what thermol is made of.

Dr. J. P. Gilmer : The first thing I want to do is to take issue with Dr. Boggess on the question of typhoid fever being a self-limited disease. He says it is not—I say it is, and I say this for the reason that we have never been able to cut short a case of typhoid fever yet. The

medical journals are full of reports of so-called cases where typhoid fever has been cut short. A recent issue of the *Medical World* contains a report of four such cases, but it is self-evident that these were simply cases of remittent fever. We never cut short a genuine case of typhoid; the only thing we can do is to stimulate the patient and keep the temperature down. By keeping up the strength of the patient and keeping down the high temperature we may be able to prevent complications.

I suppose the doctor's reason for preferring buttermilk to sweet milk is that the latter contains more casein. I have never had any trouble about getting good milk in this city. I gave sweet milk in the army, and in my service there I saw two hundred and four cases of typhoid fever; I have had several in my private practice. I have had nine this winter, and have never lost a case. I always give sweet milk diluted with Vichy or lime water; after boiling the milk, Vichy or lime water is added. Many patients do not like buttermilk.

I have given calomel in some cases, and salines are also useful; but to clean out the bowel the best thing of all is an enema, and I give them every day. As for keeping up the strength of the patient, I like a preparation called bovine, and I give it diluted with equal parts of wine every three hours.

The antipyretics, especially coal-tar preparations, are bad; they have a depressing effect on the heart, and I do not think we can afford to use them. I prefer quinine to any thing else.

One thing the doctor did not speak of, and one which is important, is the hygiene of typhoid fever. We should see that the room is kept cheerful, that it has a southern exposure, two or more windows, aired every day, the temperature kept at sixty-five or seventy degrees F., and that the excreta, urine, and feces are properly disinfected, the linen changed every day, and, before bathing, the patient should be rubbed with a towel for twenty minutes before soap or any thing else is used upon him.

Dr. M. F. Coomes: A year or two ago I wrote a short editorial on the subject of perforation of typhoid fever. No patient, until life is extinct, is too far gone to attempt an operation. There is no question but they will die if not operated upon, so why not operate? If we have learned any one thing in the world it is that alcohol, properly used, is a food-stuff. I think too much attention can not be paid to these two points.

Dr. J. R. Wathen: In regard to intestinal antiseptics in the treatment of typhoid fever, as advocated by Woodbridge and others, I would call attention to the statistics of the United States army, in which they have given this method a thorough trial and are very much against the treatment from a clinical standpoint. From a scientific or pathological standpoint I can see no future for the Woodbridge treatment. How they expect to reach the lymphoid tissue of Peyer's patches by the administration of antiseptics which pass through the intestinal canal with very little absorption is hard to understand. Calomel acts principally as an antiseptic by stimulating the liver and causing the physiological antiseptic, bile, to be poured out into the intestines in greater quantities.

There is one antiseptic which deserves mention in this connection, and that is urotropin. This drug liberates formaldehyde in the urine, and is the only antiseptic which absolutely passes into the urine and into the feces without being changed by the action of the secretions. This urotropin, which is liberated in the urine as formaldehyde, acts upon the typhoid bacilli, and we know that in every case of typhoid fever after the second week there are typhoid bacilli in the urine in great abundance, in some of them to such an extent as to cause a cystitis. If urotropin is given in these cases we notice a diminution in the number of bacilli in the urine, and finally their complete disappearance.

Dr. W. F. Boggess: The short paper I read has done just what I hoped, viz: bring out a full discussion upon the treatment of typhoid fever. I use urotropin as an antiseptic in cases of typhoid fever for just the reasons stated by Dr. J. R. Wathen. Salol is another good antiseptic; it passes unchanged through the stomach, and is broken up in the intestinal tract into carbolic acid and salicylic acid, and after its administration salicylic acid may be detected in the urine. By the use of antiseptics we may hope to reach the toxins in the tissues, or, it may be, the bacilli themselves, so that we may hope to lessen the intestinal toxemia, which is one of the most important things we have to deal with. We know that each case is constantly attempting suicide by generating within himself these poisons, and if not protected by the eliminative organs—the kidneys, bowels and skin—the poisons will be generated in sufficient quantities to kill. For that reason it is important that intestinal antiseptics should be used in the treatment of typhoid fever.

As to the use of milk: As to why I advocate the use of buttermilk and not sweet milk. In the first place, in all gastro-intestinal catarrhs sweet milk is not well borne. There is an absence of hydrochloric acid,

and sweet milk passes down through the stomach in an undigested state, and instead of undergoing lactic acid fermentation undergoes butyric acid fermentation, and we know how susceptible all people are to butyric acid fermentation. The masses of curd from sweet milk not properly digested pass down into the intestine, forming an excellent pabulum for the development and growth of the bacilli, and constantly increase the toxalbumens. Buttermilk, on the other hand, has already undergone lactic acid fermentation, the curds are already broken up into fine particles, it is much more digestible, and affords less pabulum for bacterial growth in the intestine itself. Lime water and Vichy I often use along the lines already indicated. The more you dilute milk the more digestible it is. While milk alone offers all the food necessary for the growth and development of the infant, it does not contain all the food properties necessary for the adult.

If I understood Dr. Irwin correctly, he stated that while typhoid fever was a systemic disease, yet he laid special stress upon the fact that it is a local disease. You may have typhoid fever without a single ulceration of Peyer's patches, without even an inflammatory condition being shown in Peyer's patches or in the ileum. Numbers of post-mortem examinations have proven that the patients died absolutely of typhoid fever without any of the gross appearance of the disease being found in the intestinal tract. The disease is one of systemic character, the ulcerations in the intestines being only a symptom, and no more dangerous symptom than the rapid wasting, rapid degeneration of the heart-muscles, visceral degeneration, involvement of the mesenteric glands. All these symptoms are of just as much importance and just as much necessary to typhoid fever as ulceration of the intestines.

JOHN R. WATHEN, M. D., *Secretary.*

NEW YORK ACADEMY OF MEDICINE—SECTION ON
ORTHOPEDIC SURGERY.

Meeting of December 20, 1901. George R. Elliott, M. D., Chairman.

Dr. Royal Whitman presented a child twenty-one months old suffering from a condition which had at first been mistaken and treated as tuberculous disease of the knee-joint. The particular interest lay in the fact that it was rheumatoid arthritis. The mistake was not uncommon when the larger joints alone were affected, as the signs were similar in the early stage. At present both knees are involved; also a wrist, ankle, and the fingers. The case was presented, first, because rheumatoid arthritis was rare in young children, and to call attention to a common error in diagnosis.

Torticollis. Dr. Whitman presented a patient showing the ordinary treatment of confirmed torticollis. The permanency of the cure was the especial point to be noted. The treatment was by the open method of complete division of all the contracted tissues, over-correction of the deformity, and fixation for several weeks in plaster of Paris. The advantage of a thorough operation was the ability to dispense with apparatus, while after the subcutaneous method apparatus was often necessary because not always possible to completely overcome all deformity. The case showed, to a moderate degree, hemi-atrophy of the face, which is very marked in some instances.

Radical Treatment of Club Foot. Dr. Whitman also showed the result of radical treatment of club foot in a child eight years of age. One foot had been cured by the ordinary means in early life; the other foot was operated upon in July last. The foot that recovered first was much larger than the other, an illustration of the effect of deformity in retarding development. He considered the Phelps open operation the best of the more radical operations for the ordinary club foot of childhood and adolescence, the advantage being that the inner border of the foot was lengthened instead of the outer side being shortened, as was the case in certain operations on the bones. This patient was not confined to bed for more than one week; after that it was allowed to walk about on the plaster of Paris bandage.

Dr. V. P. Gibney asked Dr. Whitman if the occurrence of rheumatoid arthritis in young children was frequent in the literature?

Dr. Whitman replied that he had not investigated the statistics on the subject, but that he had seen several cases in his practice and would judge that it was not exceedingly uncommon in early life.

Dr. W. R. Townsend said, in referring to the case of torticollis operated upon by Dr. Whitman, that he could not agree with Dr. Whitman as to the disappearance of the scar. He had seen many of these scars which looked well shortly after operation, yet had a tendency to grow more unsightly; he had even known keloid to develop. He thought that at all events patients should be warned of the possibility of a scar remaining.

Dr. Homer Gibney stated that he had seen a number of cases treated by both methods, open and subcutaneous. He had seen several scars disappear in young children. He considered the subcutaneous method the safest except in very severe cases.

Dr. T. Halsted Myers said a transverse incision would give the same exposure of the operative field, and would enable the deformity of the scar to be better concealed.

Dr. Whitman had had no experience with keloid developing late in the scars; if such appeared it was usually within a few months after operation, he thought. He stated it as his experience that the scars practically disappeared.

Extreme Deformity of Rickets. Dr. V. P. Gibney presented two cases showing extreme deformity of rickets. The upper arms, back, and legs were involved in one case, giving the typical deformity of the disease. The second patient showed the lateral spinal curvature, the typical deformity of the thorax, beaded ribs, also deformity of the legs and arms. Both were being treated in the Bradford frame, made convex, in conjunction with general constitutional treatment.

Club Foot Shoe. Dr. Gibney also presented a patient wearing a club foot brace, seen in Hartford and used by Dr. Cook as a modification of Taylor's club foot shoe. In private practice he had been able with this apparatus to control some of the most obstinate cases. In the patient presented, treatment was begun when the patient was six weeks old. Several forms of apparatus had been used from time to time, but relapse had occurred. At present, after wearing the modified shoe, the child holds her foot in perfect position and walks without deformity. The apparatus is a good retentive one, though it does not take the place of operation.

Talipes Equino-Varus. Another case, a child twenty-one months old, was also shown by Dr. Gibney with talipes equino-varus. The deformity was extreme and was corrected under an anesthetic, and various methods had been employed. The last time it was seen it presented the typical "reel-foot." It was thought that if the head of the astragalus could be removed, the fascia divided, and the foot replaced, a cure could be effected. A relapse occurred after six or eight months. Under anesthesia the foot was forcibly put in calcaneo valgus; later a club foot spring with pelvic band was put on and served fairly well, except that two sets of apparatus had to be kept on hand. Finally the modified braces were used successfully.

Case for Diagnosis. Dr. Gibney also presented a boy eleven years old for diagnosis. He came to the hospital some months ago with the history of an injury four weeks previous, having fallen, striking his hip. He got up and limped about, but the next night could not sleep; he had fever, with delirium. On admission to hospital he walked with thigh flexed on pelvis, had little fever, and complained of pain in the hip extending to the knee. He was thought to have hip disease, and was treated with pulley in bed. After three weeks the angle of extension was 110 degrees, flexion normal, practically no pain on pressure. There was no apparent abscess, and the spinal column was not involved. The diagnosis became doubtful. In October fluctuation was thought to be detected under the vastus externus. Incision was negative. The original diagnosis was finally abandoned and the case was considered one of periarthritis.

Dr. Myers asked Dr. Gibney what would be his prognosis in the case of the spinal curvature in the rickety patient?

Dr. Whitman stated in reference to the case of rickets, that when the patient entered the hospital the spinal deformity was thought to be the most serious of the distortions, and that for that reason the patient was placed on the frame.

Dr. Gibney said that Dr. Whitman had partly answered the question of prognosis. He thought the child should be kept in over-extension for a while longer, and that afterward a brace would keep the spine in place, and that as the child developed the deformity would be in a measure outgrown. He considered the cases easy to manage so long as they could be kept under observation in a hospital; outside the prognosis was not so good. No manual force had been applied to these cases yet.

Dr. A. B. Judson suggested that while the children were being kept on the frame would be a good time to give mechanical treatment to the lower limbs.

Dr. Gibney considered the suggestion a good one, and would adopt it.

Dr. S. A. Twinch asked what dietetic treatment was adopted.

Dr. Gibney stated that no scientific feeding was followed. Milk and cod-liver oil were given; sometimes iron. The object had been simply to keep the children well nourished.

Dr. Judson said that the club-foot shoe that was shown seemed more like a modified Taylor brace. It was evidently an effective apparatus. He noticed the absence of an ankle-joint, which was very properly omitted, as better leverage was thus obtained, and there was no good reason for the fear that want of motion in the brace would impair ultimate motion in the ankle.

Dr. Myers asked Dr. Gibney his opinion of tuberculin injection for diagnosis.

Dr. Gibney stated that he had not made use of these injection-tests recently. He cited a case at St. Luke's Hospital (the first case treated there) where several lesions developed after the injections, which some years have been required to relieve.

Dr. Townsend said that at a symposium on tuberculosis recently held under the auspices of the New York County Medical Association Dr. DeSchweinitz and others discussed the tuberculin test at length. The consensus of opinion, as expressed by the men present, was that as a test for tuberculosis its value was doubtful, but that the injections were innocuous.

Incipient Hip-Disease: Recovery. Dr. A. B. Judson presented a girl eight years old, who had been before the Section on November 16, 1900. At that time the history of left hip-disease, covering twelve weeks, had included inconstant lameness, knee-pain and reflex, night cries, muscular atrophy, and limitation of motion. A steel crutch and high shoe had been worn from November, 1900, to November, 1901. Recovery had been so complete that the only traces were three eighths of an inch shortening and one fourth inch muscular atrophy. The case illustrated the importance of early diagnosis. Traction and immobilization had not been sought. Recovery visited the limb, freed from the weight of the body by being made pendant. In this artificial environ-

ment the focus was quenched which otherwise would have broken into flame.

A Device for Deformities of the Knee. Dr. Judson presented a girl ten years old, wearing a device useful in deformities of the knee. The patient was Case 3, white swelling of the knee, presented to the Section October 20, 1899. The problem was to prevent the fixative brace from seeking the inner side, where it caused knock-knee, and to keep it behind, to oppose flexion. The brace was made of one piece, with the shoe in such a way that when the shoe was on the brace would be in the proper place. A light steel bar extended up the leg and was fastened to the upright part of the brace by a sliding ring keeper. Its lower part, bent at a right angle, was screwed to the under side of the heel of the shoe at an angle to secure the effect desired, keeping the brace behind to oppose flexion, or to the outer side to oppose knock-knee.

Softening of the Tibia. Dr. J. P. Fiske presented a case of localized softening of the tibia at the age of adolescence. The patient, a girl now fourteen years of age, was first seen in 1898, when she complained of localized pain in the lower part of the leg, well above the ankle-joint, thought to be a referred pain due to improper gait. A strap bound around the part brought no relief. The curve at the lower part of the tibia increased. At this time a positive diagnosis of tuberculous disease was made by a distinguished consultant, and fixation advised; plaster splint was worn for six months. At the end of that time the leg was in the same condition, except atrophy, but measurements showed that the tibial curve had increased. Two months later exploratory incision revealed negative results. February, 1901, an osteotomy was performed in the lower one fourth of the tibia, the fibula shortened one eighth inch, the deformity corrected, and leg put up in plaster. Ten days after the operation the patient was fitted with an ambulant splint and six weeks later walked without the apparatus. Since then there have been no symptoms. The diagnosis of softening of the lower part of the tibia seems to have been the proper one. There is no difference in the length of the tibiæ.

Congenital Deficiencies. A second patient presented by Dr. Fiske was one of congenital absence of fibulæ and outer side of foot, with equinus. The patient was seen at the age of one year. The fibulæ and several of the metatarsal bones were absent, also the heel was

undeveloped. An osteotomy was performed at once, with tenotomy on the tendo Achillis, the position of the feet corrected. At present child is able to go about with a light brace.

Dr. George R. Elliott asked Dr. Fiske what kind of softening was present in the lower third of the tibia in the patient he presented.

Dr. Fiske stated that he had not reached any definite conclusion. He saw no reason why it should not be included in the same class with softening of the neck of the femur occurring at the age of adolescence. It might possibly be due to some error in development and in part to the weight of the patient.

Double Congenital Club Foot. Dr. Leonard W. Ely presented a patient one year old, showing result of treatment for double congenital club foot. The point of interest was that the right foot was treated uninterruptedly with a brace and the left with plaster of Paris. In contradiction to the general idea that plaster of Paris causes atrophy, the right leg was shown to be much smaller than the left.

Tendon Transplantation. Dr. R. A. Hibbs showed the result of tendon transplantation done in July, 1901, for paralysis of the tibialis anticus muscle. The extensor proprius hallucis was inserted into the periosteum of the scaphoid, and its distal end into the first division of the common extensus. The patient (21 years) exercised a good deal of intelligence in perfecting the action of the muscle with its new attachment. The foot had been in a position of marked valgus, with the scaphoid very prominent. The deformity was completely corrected. He stated that in all his cases during the past two years, when possible, he had attached the transplanted muscles to the periosteum.

Dr. Myers said the point mentioned by Dr. Hibbs in attaching the tendon to the periosteum was important; he did not believe in matting tendons together; the connecting bands stretched and the union was ineffective. He had just dissected such a case. If the tendons were divided and the live one united to the tendon of the paralyzed muscle there was also often stretching.

Dr. Whitman said that the operation of periosteal tendon transplantation had been extensively practiced by Lange, of Munich, who had reported many cases; his own experience with the operation had been favorable.

Dr. Fiske emphasized the importance of transplanting muscle tendons into the periosteum, especially when the muscle was to work at raising the inner side of the foot or the heel.

Congenital Dislocation of the Hip under Treatment. Dr. Elliott presented a child aged two years, upon whom he had reduced a congenital dislocation of the hip by the Lorenz non-cutting method, showing the bandage in position. He presented the patient to show the position of the leg when the dislocation had been successfully reduced. A slight degree of hyper-abduction was necessary with the knee pressed back slightly posterior to the transverse axis of the pelvis. There was frequently considerable difficulty in getting the head of the femur into the acetabulum, and of getting the knee down to the mid-transverse pelvic plane or posterior to it, but unless this could be accomplished the operation should be abandoned as a failure, as relapse was certain.

In the patient presented he felt quite positive of a good result.

THE TREATMENT OF GONORRHEA.—Casper (*Berliner klinische Wochenschrift*, No. 22, 1900) advises against all abortive treatment, as not accomplishing the desired object, but favoring the occurrence of complications. The symptoms of the disease do not appear until some days after the gonococci have penetrated the mucous membrane of the urethra. The introduction of instruments into the urethra during the acute stage, so long as a florid, purulent discharge is still taking place, is contraindicated, as are also injections that induce irritation of the urethra or aggravate existing inflammation. Some cases of acute gonorrhea set in with marked inflammatory manifestations, while others are wholly unattended therewith. The latter occur especially in patients who have previously had gonorrhea. In both groups injections may be begun on the first day, but in the first no remedy should be employed that causes irritation or aggravates the inflammatory process, such as preparations of silver. Under these circumstances, potassium permanganate may be employed in dilutions of from 1:10,000 to 1:8,000. In the less acute stage, injections of antiseptic silver salts are useful, and of these the nitrate is the best. This may be employed first in a concentration of 1:10,000, gradually increased to a strength of 1:4,000. Both of these are irritating, and should therefore never be employed alone, but always in association with astringent, secretion-reducing, and antiphlogistic agents. Thus, a combination of silver nitrate with potassium permanganate is injected first; then silver nitrate and zinc sulphate are subsequently employed; and finally potassium permanganate and zinc sulphate in the last stage. The more frequently the injections are made the better. Attempts have been made to destroy the gonococci and control the secretions by means of a single preparation—zinc permanganate—but this has not proved so successful as the combination of zinc sulphate with potassium permanganate.—*Medical Record*.

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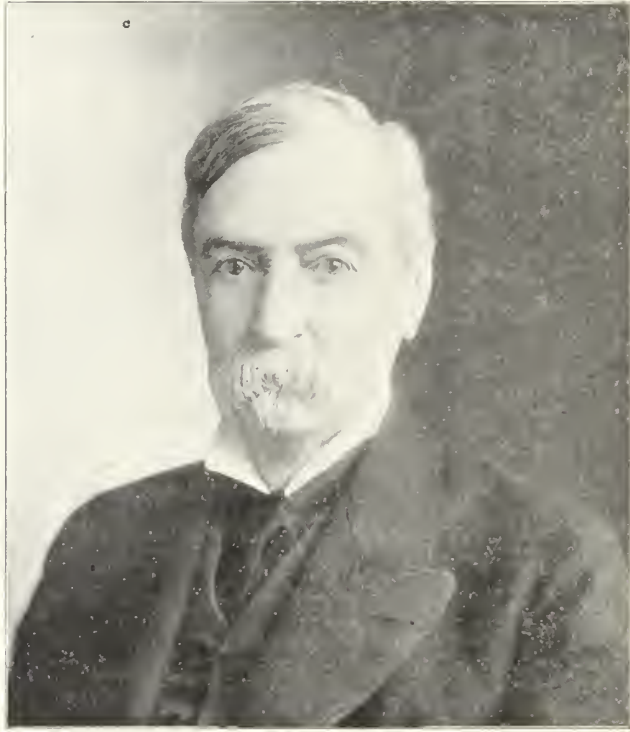
DR. JAMES RODMAN.

In the death of Dr. James Rodman, of Hopkinsville, Ky., on Friday morning, January 10th, the medical profession of the State lost one of its most distinguished and honored members, whose name and example should live in history as an inspiration for younger men.

He was born at New Castle, Ky., in 1829, and graduated in medicine at the Medical Department of the University of Louisville in 1849, and in 1861 was appointed the first Superintendent of the Feeble-Minded Institute, near Frankfort, which had been recently created by a bill introduced by his distinguished brother, the late General John Rodman, then a member of the legislature. He resigned this position to accept the appointment of Superintendent of the Western Lunatic Asylum at Hopkinsville in 1863, which position he filled with honor to himself and to the State for twenty-six consecutive years, when he gracefully retired to private life and lived in peace and happiness with his interesting family in his elegant home in Hopkinsville.

His brother, Dr. Hugh B. Rodman, and his nephew, Dr. W. B. Rodman, of Frankfort, Ky., were two of the State's most learned and respected physicians, and his brother, the late General John Rodman, was a man of distinguished honor and courage and one of the most

learned and successful lawyers of the State, while his nephew, Dr. William L. Rodman, Professor of Surgery in the Medico-Chirurgical College and the Woman's College, of Philadelphia, is one of the most successful surgeons and best-known writers upon surgical questions in this country. While Dr. Rodman was not a voluminous writer upon medical topics or a medical-society man, he was a master of vigorous.



DR. JAMES RODMAN.

incisive, and at the same time beautiful English, and in conversation he was one of the most interesting and attractive men we have ever known. His great learning and long and varied experience in the treatment of mental diseases, and his unequalled executive ability in asylum management, gave him a front rank in the list of asylum superintendents of this country.

The medical profession had but few members so able, clean, and dignified, and let us hope that his beautiful and perfect life as a physician and citizen may be pictured in the hearts and minds of the physicians who live after him.

Current Surgical and Medical Selections.

THE THERAPEUTIC VALUE OF UROTROPIN.—Dr. Emil Suppan, of Vienna, says, in the *Wiener Medizinische Blätter*, that since the time that Nicolaier first introduced urotropin for the treatment of bacterial disease of the urinary tract and the uric acid diathesis numerous reports have been made fully confirming the therapeutic value of the remedy. It is of immeasurable value in practice to possess an agent for the relief of those severe forms of cystitis occurring in old men, due to prostatic hypertrophy, and leading, as a rule, to chronic pyelitis or pyelo-nephritis and all the symptoms of chronic urinary intoxication. Urotropin is of the very greatest value as an aid to the local treatment, and in many cases can replace it entirely.

The author advises that urotropin be always employed in every case of urosepsis of the aged with prostatic hypertrophy, in all the non-acute and septic bladder and pelvic catarrhs which are the consequences and complications of this growth, as also in inflammatory conditions dependent upon atrophy of the prostate, neoplasms and diverticulæ of the bladder, and stricture.

Dr. Suppan mentions a case among others treated some eight months ago. A patient aged seventy-two years had had for the last fifteen years frequent, almost hourly, urination, especially at night. His color was faded, he was much emaciated, and there was no appetite. His prostate was very large, especially the median lobe, which projected into the bladder; and there were deep recesses behind and at the sides of this protuberance in which the urine was constantly stagnant and undergoing decomposition. The bladder was hypertrophied and trabecular, and was never completely emptied, the residual urine being about 400 c.cm. (thirteen ounces). The urine was purulent, and contained masses of mucus and pus. His fever frequently reached thirty-nine degrees C. (102.2 degrees F.), and he was often kept to his bed with chills and diarrhea. He had been having vesical irrigations for three weeks without the slightest effect. These I ordered to be stopped, after informing the relatives of the gravity of the outlook. I gave him two grams (thirty grains) of urotropin in one-half gram (seven and one-half grains) portions every four hours dissolved in half a glass of soda water. Even in four days there was a slight improvement in the urine; there was less clotted mucus and pus, and the repulsive ammoniacal odor had diminished. The fever, general malaise, and prostration gradually disappeared. On the eighth day the patient was able to leave his bed, and the administration of nourishment, which had sunk to nothing, was in full swing again. Cautious lavage of the bladder with boric acid and permanganate of potash, with nitrate of silver, could then begin. The urotropin was continued in doses of 1.5 grams (twenty-two and one half grains) daily.

In the morning the bladder was thoroughly washed out with a large quantity of fluid; in the evening the patient removed the residual urine with a Nélaton catheter himself. Improvement was continuous for several weeks. But as soon as the patient stopped the urotropin for several days the urine became worse; so that I directed him to take the drug for four days in each week. Under the continued employment of the drug, and the careful nursing that he had, the patient was finally put in a very fair condition, though of course there was no question of curing his old vesical malady. About twenty-four other cases of septic cystitis and pyelitis in the aged ran a similar course under the same treatment.

The reason why urotropin is inefficacious, or why its effect becomes less after a time in certain cases, has been explained by Casper and various other investigators. They found that in certain cases the urotropin passed into the urine unchanged, and no formaldehyde could be demonstrated in the secretion. The action of the drug, according to Casper, depends upon the presence of free formaldehyde in the urine; the more there is of it, the more of the noxious micro-organisms are destroyed. Only a portion of the urotropin is split up; and severe cases of cystitis require large doses to get its effects.—*Medical Review of Reviews*.

POST-PARTUM HEMORRHAGE: ITS PREVENTION AND TREATMENT.—Third day of the sixty-eighth annual meeting of the British Medical Association, August 2, 1900.

The papers and the discussion on this so interesting and important subject brought forth many useful points, at the same time showing that, in spite of the high standard of the Edinburgh Obstetrical School, the British obstetrical profession still lacks the thoroughness and exactness which nowadays is considered essential in medical science.

Bryers, of Belfast, mentions only two pathologic conditions as causes for post-partum hemorrhage, viz., uterine atony and a wound of the parturient tract. One of the most frequent causes of post-partum hemorrhage, and a condition which furnishes the most serious cases, at the same time the most difficult ones to deal with, atheromatosis of the uterine vessels, is entirely omitted. As "clear" causes of post-partum hemorrhage albuminuria and mental depression are mentioned. As to prophylaxis, the essayist says we never should attempt to deliver in the absence of pains. How about cases of extreme exhaustion of the mother, where no pains are present, but a strict indication for immediate delivery exists on account of the danger for mother and child? The hot-water douche, a means which makes us only lose valuable time, is still recommended. The bimanual compression of the uterus, which only is a temporary means to check the hemorrhage until everything is ready for the definite hemostasis, is still considered as an independent method itself.

It has to be favorably acknowledged that drawing down the cervix by vulsellums and Dührssen's tamponade are recognized as the most valuable methods.

The essayist says that Schauta advised, if packing had failed, the uterus should be forcibly inverted and a piece of gauze should be tied around its neck, leaving it on for six hours. I am sure Schauta would most emphatically protest against this insinuation. Schauta teaches that when, in spite of packing, there should still be present oozing through the tampon and flabbiness of the uterus, to remove the tampon at once and renew the tamponade by firmly packing the uterus. He mentioned only occasionally the possibility of inverting the uterus and catching the bleeding vessels. In the treatment of the anemia following hemorrhage auto-transfusion is not mentioned at all.

Boxall, of London, cautions against the injudicious application of forceps.

Campbell, of Belfast, recommends drawing down the uterus with a vulsellum, and uses hot water through a flushing curette.

Griffith, of London, thinks chloroform interferes with uterine contraction, a long ago refuted statement, and administers always ergot before giving chloroform.—*The Chicago Clinic*.

THE TREATMENT OF SPRAINS AND SOME FRACTURES.—(The Lancet) A. H. Tubby. A sprain may be defined as a momentary disturbance of the normal relation existing between the opposing joint surfaces, but varying very much in degree. In any case some stretching of the surrounding parts must take place, accompanied by hemorrhage and lymphatic effusion. In some cases the injury may cause only temporary inconvenience; in others the ligaments are ruptured, and in the severest a small portion of the bone is torn away, and in this case the injury is known under the name of sprain-fracture. Tubby notices the symptoms, the severe pain occurring shortly after the accident, then being apparently quiescent for a short while, and later recurring with increase of swelling. The first stage is that of the injury associated with stretching and tearing of the parts and effusion of the blood. The second stage of pain after the quiescent period is due to tension and continued effusion of the blood. A great deal of damage is often sustained by the patient when he attempts to use a sprained joint during the quiescent period. This retards the period of convalescence. It is important in severe cases to make the diagnosis as clear as possible, and the X-ray may be valuable in case of sprain-fracture. Even when no fracture has taken place, there are frequently found about the joints some tender spots, as at the knee, where a spot is found just below the patella, and in the ankle, in front of the external malleolus. These are first noticeable during the second period of pain, and last for a considerable time and are due to rupture of the ligament in the first place and later to the persistence of roughened, inflamed synovial fringes. If they should persist for some weeks or months after a sprain, their usual cause is the formation of bands of adhesions. There are certain predisposing causes of sprains, malformations, club foot, ankylosis of the knee, atrophy of the

muscles, etc., which cause abnormal tension of the joints. As to treatment there are two methods, the mobile and the immobile. The principal thing to remember is what to do and the right time to do it. At first the author recommends applications of cold water for a short time during the first two or three hours after the accident. The position is important, as the joint should be put in the position of least tension and the potential cavity be lessened. For instance, the knee should be placed in extension and not flexion and the ankle at a right angle. Bandaging should be done in such a way as to relieve pressure over the point where it can cause more tension and tenderness. If the sprain is seen within the first two or three hours he insists on the following treatment: Apply cold vigorously for a quarter of an hour, either by pouring on cold water, applications of ice or the spirit lotion, then wrap the joint around with lint or other material soaked in cold water, and put on the cotton-wool in such a way as to relieve the pressure over the prominent points, and place the joint in such a position that there is the least potential cavity for effusion to be poured into, and firmly bandage the part. During the period of quiescence the same round of treatment should be followed out where there are still some quiet effusions going on, but when the second stage of the pain occurs the right thing to do is to apply heat, as hot applications exercise a permanent effect on the duration and the amount of swelling. The most important question is the duration of the period of rest. It may be said that as a rule most joints are rested too long. On an average of three or four days after the swelling has subsided movement of the joint should be commenced. The direction of the movement is an important point, so as not to interfere with the healing of strained and ruptured ligaments. When the amount of swelling is very great, hot applications and rest are not sufficient, and here properly applied friction comes into play. Together with rubbing, frequent applications of hot water and gentle movement should be carried out. If after ten days' treatment the thickening about the joints has not disappeared and there are still tender spots, use counter-irritants by blisters. In from ten days to three weeks a severe sprain ought to cease to give trouble and the patient be able to go about with comfort, but if at this time acute pain sets in with movement, the only treatment is absolute rest. Six weeks is not too long a period to keep such a joint quiet. The mobile treatment of sprains can only be used in very slight cases, and then with some misgivings. The author concludes his paper with the treatment of fracture about the elbow-joint and separation of the lower epiphysis of the femur.—*Journal American Medical Association*.

ACUTE YELLOW ATROPHY OF THE LIVER, TERMINATING IN RECOVERY.—Albu (*Deutsche med. Wochenschrift*) reports this case, which makes the eighteenth that has been published. The patient was a man of thirty-six years, with a negative past history, who three weeks before coming under observation had become jaundiced after an emotional shock. This condition continued for some time, until mental hebetude and great

prostration developed, when the author was called to the case. There was then noted profound muscular weakness without any emaciation, slight impairment of the mental faculties, a temperature of 103 degrees, and slow pulse. The liver dullness was greatly decreased, extending from the sixth rib only two inches downward, there being tympany under the free costal arch. The spleen was palpable, the urine bile-stained and containing no albumen, but large amounts of indican, leucin and tyrosin. The stools were acholic. At the end of the sixth week from the first access of the jaundice the temperature stayed down permanently, the liver dullness began to increase, and the enlarged spleen receded. The patient soon regained his former strength and vigor, though the jaundice did not wholly disappear until about three months later.—*Medical Record*.

EVERSION OF THE TUNICA VAGINALIS AS A REMEDY FOR HYDROCELE. Dudley Tait (San Francisco Annals of Surgery). Touget's operation is considered the best procedure in all cases of hydrocele. It is carried out as follows: Under local anesthesia a fold of the scrotum is taken up over the testicle and cut with scissors down to the serosa. This is taken up and cut through in a like manner. Neither the superficial nor deep incision should exceed 3.5 centimetres in length. The testicle is turned out and drawn upward and forward till the tunica vaginalis and overlying cellular tissue are turned inside out. The tunica is held in place by two or three catgut sutures passed so as to avoid constricting the cord. The testicle is replaced in a new bed in the inner lip of the incision, made by dissecting a space in the cellular tissue. When replaced, the testicle is retroverted and twisted a quarter of a circle on its long axis, so that its anterior surface is against the raphé. The operation is completed by suturing the wound. There is no reaction and no tenderness after a few hours, and the patient may resume his work on the following day. After a few months the scrotal tissue becomes freely movable over the testicle.—*Georgia Journal of Medicine and Surgery*.

TREATMENT OF GASTRIC ULCER.—Dr. Mayo Robson says, with reference to this question, that the treatment of this condition is at first essentially medical, and if properly carried out and for a sufficient length of time it is usually completely successful; but in many cases, either from the uncertainty of diagnosis or from the impatience of the patient, care in diet and rest are not persevered in for a sufficient length of time and relapses result; treatment is again resorted to, and relief, but not cure, follows, until in the long run complications supervene or the ulcer becomes chronic, when surgical treatment is in many cases the only method capable of affording relief.—*British Medical Journal*.

Special Notices.

A WORD OF PRAISE.—It gives me pleasure to say a kind word for Sanmetto—it surely deserves praise. I have been using Sanmetto in all affections of the genito-urinary tract, and it is by far the most reliable and unfailing agent of its class known to me in thirty-one years' experience as a medical practitioner. *Vival Sanmetto!*

Scott, La.

H. D. GUIDRY, M. D.

I HAVE no hesitation in saying that I consider Peacock's Bromides invaluable, and have for years used it exclusively in my sanatorium when bromides were indicated. Commercial bromides are crude and rank as compared with Peacock's. The greatest danger of injury to the patient and the product lies in substitution. I now only buy from my wholesale druggist in dozen lots.

ALLAN MOTT RING, M. D.

Arlington Heights, Mass.

I AM more than pleased with the physiological action of Seng in the treatment of chronic indigestion. It seems to nicely restore the action of the stomach, re-establish perfect digestion, and its good effect is quickly evidenced by the general improved appearance of the patient.

J. CARL LUDWIG, M. D.

Cincinnati, Ohio.

ANTI-KAMNIA AND HEROIN TABLETS IN PREVALENT GRIPPAL CONDITIONS.—THOS. G. RAINEY, M. D., L. R. C. P., resident physician, British Medical Institute, Atlanta, Ga., in a recent article states that the comparatively new combination of drugs—antikamnia and heroin tablets—which has been so largely used for the control of cough, is also being successfully employed to a large extent in the treatment of nearly all affections of the respiratory tract which are accompanied by dyspnea and spasm, namely: asthma, bronchitis, laryngitis, pneumonia, phthisis, whooping cough, hay fever, la grippe, etc. In cases in which the patients were suffering from the severe attendant pain of these diseases, it was found that this combination acted most satisfactorily. Each tablet contains five grains of antikamnia and one twelfth grain heroin hydrochloride. One tablet was followed by a rapid diminution of pain, and after the third tablet the pain entirely disappeared. In treating the affections enumerated above, the dose is one tablet every two, three, or four hours, according to indication.

"MEMORIA IN ÆTERNA."—As time flies by, amid the rush and bustle of this eminently practical work-a-day world, one unconsciously displaces from the mind of to-day the remembrances of the happenings of yesterday; there are, however, some things which should remain "in everlasting remembrance." The gentleness, strength, and beauty of the personal character of William McKinley, and the inestimable value of his services to the nation and the world at large, should not be consigned to the mental dust-heap of oblivion, but should be cherished as a precious heritage by every patriotic American, whether native or foreign born. Feeling confident that their friends in the medical profession will appreciate at its proper worth a souvenir which shall serve as a constant reminder of the life, character, and services of our third martyr President, the Arlington Chemical Company has prepared for gratuitous distribution a magnificent enlarged reproduction (17 x 13) of one of the finest and most faithful portraits in existence. Competent critics who have seen this reproduction have expressed themselves as surprised at the faithfulness with which the beautiful Rembrandt effect has been carried out, with its rich dark sepia tints, and with the general artistic worthiness of the portrait as a whole. The advertisement of Liquid Peptonoids is so unobtrusive as to be entirely unobjectionable. The Arlington Chemical Co., Yonkers, N. Y., will be pleased to send a copy to any physician who may have failed to receive one, together with suggestions for proper method of framing.

THE AMERICAN PRACTITIONER AND NEWS.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

SURGERY OF THE URINARY BLADDER.*

BY JOHN R. WATHEN, A. B., M. D.

Clinical Professor of Gynecology in Kentucky School of Medicine; Visiting Surgeon to Louisville City Hospital and Kentucky School of Medicine Hospital; Member Kentucky State Medical Society, Louisville Society of Medicine, and Louisville Clinical Society, etc.

This is a department of surgery which has been greatly neglected in the past, and only of late have we turned our attention to so important a field for operative work. Operations for stone, wounds or ruptures and enlarged prostate were quite common, but surgery for tumors, benign or malignant, and cancerous infiltration of the bladder walls from malignant structures in its vicinity was not often undertaken. Before considering the surgical treatment of the tumors, I will briefly allude to the diagnosis.

We have been aided in this by superior instruments and more careful pathologic investigations, and are fast reaching accurate and positive conclusions. In no class of diseases have we worked so much in the dark, and acquired so little real or valuable knowledge to aid us in our treatment.

One of the earliest signs of a tumor of the bladder is known as symptomless hematuria. When we have to deal with this condition the electric cystoscope is indispensable. "The cystoscope will often enable the skilled observer to pronounce upon the character of the tumor, or to say definitely whether operative interference will or will not lengthen the life of the patient, and whether it will alleviate or aggravate his suffering." (Fenwick.)

* Read before the Louisville Clinical Society. For discussion see p. 242.

The introduction of sounds into the bladder to discover tumor is worse than useless, and often positively detrimental to the patient.

The first examination of the patient should be a rectal or vaginal examination of the bladder wall, according to whether the subject be male or female.

When we inspect the bladder with the cystoscope, we may encounter two well-marked varieties of vesical tumors—the villus-covered and the bald. The villus papilloma may be malignant or benign, but the bald is always malignant, and particularly so if the patient is over forty-five years of age. The villus papilloma resemble chorionic villi, and are of a light fawn color, showing beautifully the capillary circulation. They float about in the urine, and resemble sea-weeds under the water. Their attachment to the bladder wall is almost always outside the trigonal area, to the outer side of the orifice of the ureter, and more often in front of it, while sometimes they arise from the true lip of the ureter itself, and thus have probably been caused by some direct irritation of an unusual kind from the urine of the kidney on that side.

The pedicle of this variety of tumor varies in size from a mere thread to that of a quill, and the larger the pedicle, or base, the more liable it is to become malignant. The multiplicity of villus papilloma also tends toward malignancy.

The first symptom of hematuria is often followed by an impediment to urination and to mechanic obstruction of the orifice of the urethra. Later we have the kidney-ache, which is caused by the ascending inflammatory changes, and is felt on the side on which the tumor is located. These symptoms are sooner or later followed by a cystitis, unless great care is exercised in the management of the case. This confuses the diagnosis, complicates the disease, and may eventually end the life of the patient by developing a pyonephrosis.

The benign papilloma is very liable to undergo a gradual malignant transformation of the stalk or pedicle. The villus malignant papilloma or carcinoma is less liable to be single, and occasionally a certain proportion are partly free from villi, and approach the bald type. These have a large base or pedicle, and show a tendency toward infiltrating the bladder wall. They are more often situated on the right side near the orifice of the ureter, and the first symptoms of hematuria occur usually between forty-five and sixty years, while the benign appear earlier. The bald type is the most malignant of the bladder tumors, and differs from the two preceding forms in that it tends to involve the

bladder wall, is not so prominent on the surface, and the rapidity with which other vesical symptoms appear—as cystitis, pain, etc., after the initial hemorrhage. These tumors also appear near the ureters, and present a bald, irregular, nodular growth of a dull red color similar to that of the inside of the mouth. It is in strong contrast to the white color of the posterior wall.

Pain is a more prominent symptom in the bald type of tumor, and the extent of involvement of the bladder is better told by the extension of the pain than by the hardness of the vesical wall.

In summing up the points of differential diagnosis of tumors of the bladder, the following are the principal facts to consider: The benign villus appears between thirty and forty-five; the initial hemorrhage is rarely severe; fragments are often evacuated, and the prognosis as regards length of life is good.

The malignant villus appears between fifty and sixty, hemorrhage is very rarely severe, fragments evacuated are common, and the average life is about eight years.

The bald malignant appears between fifty-five and sixty-five, hemorrhage is commonly severe, fragments are rarely evacuated, and the average life is a little over two years. The softer tumors have longer periods of hemorrhage, while the denser ones exert their energy in infiltrating the vesical wall.

“Most tumors, whether benign or malignant, terminate the existence of the patient by inducing renal complications.” (Fenwick.)

The larger and thicker the stem or pedicle of the tumor, the more malignant it is liable to be and the sooner will result infiltration of the bladder wall, followed by irritability, pain, cystitis, pyonephrosis, and death.

In regard to the operative interference with vesical growths we should be guided by the extent and character of the tumor. When the bladder wall has been infiltrated, so as to be felt per rectum, we should not attempt to remove the tumor unless we remove the entire bladder, and if this is impracticable we may substitute a supra-pubic incision to relieve the pain and for better drainage. Most operators condemn the perineal route in this condition, as it increases the pain and vesical spasm, and Fenwick says that “Perineal cystotomy for a radical attack on vesical tumors does not deserve the name or cloak of surgery.”

When we have a single villus-covered pedunculated tumor, with unilateral renal pain, or causing an obstruction of the urethra, we should make a small supra-pubic incision and remove the growth. But if the

tumor is large and so fills the bladder that we can not use the cystoscope we should first open the bladder above, and if a small pedicle is found remove the growth, or if the pedicle is very large we may have to open the abdominal cavity and resect a large area of the bladder wall.

As to the technique of the removal of these growths in the male, we should first make a very small incision as near the pubic bone as possible, and just large enough to admit the finger for exploration of the bladder after it has been distended with water.

Pedunculated tumors may be removed by first twisting the pedicle and then slipping a delicate curved clamp down on the pedicle as close to the bladder wall as possible and finally cutting away the growth above the forceps. This instrument is allowed to remain in the bladder for about twenty-four hours, and then removed. The supra-pubic incision into the bladder should always be as small as possible, and by the use of retractors, or, better still, a caisson-tube, as Fenwick recommends, we can conduct most of the operations required on small growths. Gentle manipulations should be the rule in bladder surgery, and we should avoid making traction on a tumor or its pedicle, as the mucous membrane of this viscus bleeds readily and the hemorrhage is hard to control. Never crush a bladder growth, but completely remove it if possible. We should never try to bring the tumor into view in the supra-pubic wound, as the hemorrhage resulting from the tear of a soft pedicle may be quite severe. Often the peritoneum can be dissected off the bladder and a large area of the bladder wall removed without endangering the peritoneal cavity to infections. The bladder is best sutured by separate transverse stitches which pass through the muscular layer without involving the mucous membrane.

In the female, the bladder opening can be made through the vaginal wall and the growth removed with more ease, or even through a Kelly endoscopic tube. After all operations for vesical growths we should employ free drainage.

The mortality for removal of these tumors is not great, as Fenwick reports 135 operations out of 500 cases, with only five deaths due to the operation. The first operation for removal of the entire bladder in the male was performed in 1888 by Bardenheuer, and in the female by Pawlik in 1889, but statistics of late are rapidly increasing. Pawlik used the vagina as a receptacle for the urine. The technique of the operation as advised by Dr. Mann is as follows :

Technique of Operation. The patient having been prepared in the usual manner for abdominal section, the urethra is dilated to admit the

index finger, and the bladder thoroughly washed out with a saturated solution of boric acid, a portion of the solution being left in the bladder. The vagina and vulva are also thoroughly washed with green soap and sterilized with an antiseptic solution.

The abdomen is opened by an incision which extends down to the symphysis pubis. The patient is then put in the Trendelenburg position, and the peritoneum cut from side to side across the fundus of the bladder. The peritoneum is stripped away from the bladder walls with the fingertips, the attachment being very loose. The bladder is also separated from the front wall of the pelvis as far down as the neck. After the bladder is all loosened except at the base, the neck is first tied and then cut with the scissors, the finger introduced into the urethra being used as a guide. This incision is carried through the anterior vaginal wall, the wall being pulled up into view by dragging upon the bladder. The incision is then continued around the anterior vaginal wall, so as to include the whole base of the bladder, and so as to cut the ureters just as they enter the bladder wall, the finger in the vagina aiding very materially in this step. The piece to be removed from the anterior vaginal wall, to which the base of the bladder is attached, is about as large as a silver dollar. In this way both the ureters and the urethra open directly into the vagina. It is entirely unnecessary to try and do any thing with the cut ends of the ureters, as they continue patulous and discharge into the vagina after cicatrization has taken place.

If the uterus is involved in the carcinoma the technique will be somewhat different. After the abdomen has been opened, the ovarian arteries must first be tied and the broad ligaments cut to the uterine cervix. A flap of peritoneum should then be stripped from the back of the cervix and the vagina opened in the cul-de-sac. A peritoneal flap is also separated from the anterior surface of the cervix, and the uterine arteries tied, or the anterior branch of the internal iliacs may be tied, so as to cut off all blood-supply from the pelvic floor. The peritoneum over the bladder is then cut transversely and the bladder enucleated. After the neck has been tied and cut across, the vagina is incised in front, and the incision then carried around on each side so as to meet the opening already made in the posterior fornix. In this way the bladder, the whole anterior vaginal wall, and the uterus are removed without separating them, and the danger of infecting the surrounding tissue much diminished. The peritoneum covering the bladder and the cervix in front and behind must be left intact, unless it be infected. When sutured it should entirely cover the pelvic floor.

The chief consideration in complete removal of the bladder is the method of disposal of the ureters. This part of the subject alone would require many pages to give the various methods and their results, so I will only give the conclusions arrived at by Dr. Boveé after a careful collection of all available statistics :

1. Until a more satisfactory plan of disposal of the ureters is found, cystectomy should never be undertaken for conditions other than exstrophy, when partial extirpation of the organ is possible. Even a very small portion of the bladder into which the ureters may be debouched is practically free from the great danger of infection incident to bowel grafts, and, further, such disposition of the ureters is more easily executed.

2. For exstrophy the Maydl and the Pozzi operations are quite satisfactory, though the danger of infection seems ever present.

3. Rectal graft of the ureter in its continuity, and skin grafting of this duct, are highly dangerous.

4. Ureterovaginostomy is practically free from ascending infection, though it gives far from perfect results.

5. The urethral graft of the ureter seems free from infection, but the constant dribbling of urine is but slightly ameliorated by the use of a urinal.

6. The Mauclaire-Gersuny operation is worthy of a further application, inasmuch as it provides for both sphinctered bladder and bowel.

The Madyl and Pozzi operations are those in which a portion of the bladder mucosa is transplanted with the ureter, using a large section of the trigonal area to implant into the bowel.

In the Mauclaire-Gersuny operation the bowel is severed at the junction of the sigmoid and rectum, the rectal end closed, and the ureters grafted into the upper end of this new bowel-bladder. The other or sigmoidal end of the bowel is sutured into the sphincter ani.

Time alone will demonstrate the utility of these various methods in bladder surgery, and judging by the recent progress along these lines we may hope for a sure and permanent surgical relief in many distressing maladies.

LOUISVILLE, KY.

NOTES ON VENEREAL DISEASE.*

BY C. C. MAPES.

It has been tritely and truthfully stated that "amorous conquests, seemingly full of poesy, often end in prosaical injections of sulphate of zinc or in doses of copaiba," to which we might add also injections of nitrate of silver, subgallate of bismuth, formalin, permanganate of potassium, kerosene, argonin; the introduction of catheters, bougies, sounds; the administration *per orem* of oleum santali, oleum terebinthina, belladonna, bromides, hyoscyamus; the local application of sinapisms, stupes, cataplasms.

Virulent gonorrhea is a serious affection, not to be compared with a "bad cold," as claimed by older writers. He who first made this comparison was evidently unacquainted with gonorrhea or its sequelæ as understood and appreciated at the present day.

According to Van Buren more people die of gonorrhea than do of syphilis, and Noeggerath states that a man never recovers from gonorrhea; that nine tenths of the women who marry men who have had the disease become the subjects of painful and incurable inflammatory diseases of the uterus, tubes, or ovaries. Culver declares that it is unsafe for a physician to promise a cure of gonorrhea under ten to sixteen weeks, and even then complications may lengthen the duration of the disease to many months.

Medical men have striven for years to devise ways and means by which gonorrhea may be promptly, rapidly, and permanently cured, but have not yet indicated the remedy which is capable of destroying the *materies morbi* in less than two or three weeks, oftener as many months. The reason for long continuance of the disease in the majority of instances is not inaccuracy of the physician nor inattention of the patient, but the inaccessibleness of the parts affected.

A moment's reflection upon the anatomical peculiarities of the urethral channel may not be out of place. From the fossa navicularis to the sphincter vesicæ interna the urethra is studded with hiding-places (the lacunæ of Morgagni and the racemose glands of Littre being the most notable examples), for the streptococci and diplococci which are said to be present in every case, and it is impossible for the attendant to positively assert that the most permeating injection has flushed

* With the author's permission, this paper was read by Charles G. Russman, M. D., before the Society of Physicians and Surgeons, of Louisville, Ky.

these structures and destroyed the morbid elements therein, although his treatment may have been honestly and intelligently applied. The glands and follicles of Morgagni and Littre are practically impregnable to medicinal agents, which explains the obstinacy and persistency of even an anterior urethritis. In posterior urethritis the difficulties to be encountered are manifestly increased by the additional impregnability of the parts involved: the ducts and glands of Cowper, the prostatic structures, the vasa deferentia, the seminal ducts and vesicles, the epididymis, etc. Deep injections of the most powerful antiseptics may be practiced, but can it be positively said that the *fons et origo mali* has been reached and exterminated? The anatomical arrangement of the deep urethral structures is such that the "enemy may entrench himself" and exist indefinitely in safety, as the locality presents innumerable fortresses impregnable to external influences, and this applies to local as well as general medication. The former, if it could by any possible means be made to reach the deepest recesses of the enemy's stronghold, might be efficient; the latter, through the media of the blood and urine, must remain of questionable utility and its specific action practically an unknown quantity.

It has been frequently stated by writers in this department of medical science (and the fact is simply mentioned in contradistinction to the foregoing) that gonorrhea is not a formidable malady; that cures are common in four to ten days. To such statements we wish to take decided exception, as information at our command points to the conclusion that it is one of the most obstinate, persistent, and formidable affections the physician is called upon to treat, and the sequelæ resulting therefrom are numerous, dangerous, and often fatal. Diseases of both sexes requiring capital surgical operations not infrequently follow in the wake of an ordinary gonorrhea.

It would be impossible in a short paper to describe in detail all the direful, disastrous complications and sequelæ of the disease under consideration, therefore we shall only enumerate them.*

MALE.	FEMALE.
Chordee,	Inflammation of Bartholin's gland,
Phimosis,	Vaginitis.
Balanitis,	Ulceration of vagina,
Cowperitis,	Endocervicitis,
Prostatitis,	Endometritis,
Abscess of prostate,	Metritis,

* This list of complications is from a clinical lecture by Mayo Robson, International Clinics, Philadelphia, Vol. III, 1896.

MALE.

Vesiculitis,
Epididymitis,
Orchitis,
Stricture.

FEMALE.

Salpingitis,
Pyosalpinx,
Ovaritis,
Hydrosalpinx,
Hemosalpinx,
Extra-uterine gestation,
Hematocele,
 (a) Extraperitoneal,
 (b) Intraperitoneal,
Puerperal septicemia,
Adherent placenta.

COMMON TO BOTH SEXES.

Urethritis,
Urethral abscess,
Cystitis,
Ureteritis,
Pyelitis,
Surgical kidney,
Perirenal abscess,
Uremia,
Retention of urine,
Suppression of urine,
Pelvic abscess,
Adenitis of inguinal glands,
Bubo,

Peritonitis,
Proctitis,
Sterility,
Gonorrheal arthritis or rheumatism,
 with its complication—ankylosis
 of joints,
Pyemia,
Gonorrheal ophthalmia,
Iritis,
Neuritis,
Myelitis,
Ulcerative endocarditis.

After noting such a list of possible, or we may say probable, complications, can it be maintained that gonorrhea is a simple affection, easily and quickly cured? That it is preventable primarily is true, but the misery, disease, and distress which may follow infection must not be underestimated. Again, is it not strange that a preventable malady should be so extremely prevalent in all classes of society?

A recent writer on the prophylaxis of venereal disease declares that "while there is but little danger of disease in legitimate intercourse, there is, on the other hand, great danger to the great number of those who, from necessity or choice, buy satisfaction of the flesh in secret places. Such a purchaser often gets more than he pays for." It has been demonstrated that man may remain in perfect health in strict sexual continence, so the absolute necessity of his buying "satisfaction of the flesh in secret places" does not exist. If healthy sexual living were the rule instead of the exception, *vinculum matrimonii*, neither the "necessity" nor the "choice" could be considered in evidence; necessity, in any event in the married state, would be ruled out, for it is well known that a woman in average health can be a party

to sufficient sexual indulgence to amply satisfy the demands of the most exacting husband, and with healthy sexual living a husband's "choice" should certainly be at home rather than in secret places where the "purchaser often gets more than he pays for."

When a man buys satisfaction of the flesh in secret places he is almost certain, sooner or later, to contract gonorrhea or its associate, syphilis, either of which, if the man be married, will almost as certainly be transmitted to his wife, and, it may be, to his children, born or unborn. What a deplorable condition of affairs to contemplate! Think of the suffering, disease, and misery inflicted upon innocent persons by the husband's act of imprudence! A man who will knowingly inflict such suffering, degradation, disease, and misery upon an innocent wife and children is deserving of the most cruel, terrible punishment the ingenuity of the devil can devise.

Many instances can be recalled where husbands, frequenting brothels, have become infected with gonorrhea or syphilis, in turn promptly transmitting the disease to their connubial partners, whom they have sworn to protect, and to their children, who should be protected, with the final result of physically and mentally wrecking not only themselves but those whom they have infected. As has been remarked by the writer on several previous occasions, if evil resulted only to the male under such circumstances it would be a just punishment for his infamous acts, but, unfortunately, it not infrequently happens that the heaviest burdens fall upon innocent persons to whom he transmits the disease, whether it be gonorrhea or syphilis.

The limitation or control of venereal disease is a matter which concerns the medical man as well as the layman, the moralist as well as the statesmen, the philosopher as well as the fool, and its dissemination is not always traceable to houses of prostitution. In nearly every city in Christendom there are scores of amateurs, street-walkers, clandestines, etc., among females of easy virtue, to whom much of the spread of venereal disease is due. Men who would not openly visit houses of prostitution, often those who might otherwise lead exemplary sexual lives, are first attracted by the wiles of the amateur *demi-mondaine*, and during subsequent dalliances receive and carry the virus of gonorrhea or syphilis to the conjugal couch. The amateur, not recognizing the financial importance of cleanliness, neglects this feature before and after becoming diseased (even if she is aware of her malady), which is untrue of her professional sister in the majority of instances.

In those cities where periodic medical inspection of prostitutes is enforced the liability of infection is slightly lessened, but the spread of venereal disease is not materially diminished, for, as previously indicated, its dissemination is not traceable to this source alone, and medical inspection does not extend to street walkers and clandestines.* The governmental control of prostitution has been a signal failure in all countries up to the present time, and the practice seems to have been abandoned, generally speaking.

As previously shown, the danger of contracting venereal disease is less from the professional prostitute than from the novice, but the only absolute safeguard is not to submit one's self to the source from which infection may be derived; in other words, do not consort with members of the Cyprian sisterhood.

It has been stated that the professional prostitute can teach a lesson in cleanliness which many strictly virtuous people strenuously and assiduously neglect. Before and after sexual intercourse she takes a vaginal injection of warm water, with or without the addition of an antiseptic, a procedure which is practically unknown among many supposedly virtuous and law-abiding females. Sexual cleanliness is of paramount importance in striving toward the acme of healthy sexual living, a matter which is too often overlooked or neglected in the conjugal state. Many a man has been partially justified in forsaking the conjugal couch to seek sexual pleasures elsewhere because of a slovenly, filthy, neglectful, and sexually unappreciative conjugal partner. Of the professional prostitute among the better class (if the expression will be pardoned) it is well known that cleanliness is her stronghold; upon it depends her business and remuneration therefor; health and cleanliness are essential to her success. Without these she is minus friends upon whom she is dependent for support, home (if it may be so called), pleasure, and caste among her element. The routine of vaginal injections, bathing, cleansing the urethra by micturition, etc., after sexual congress by the professional prostitute is more religiously observed than the prayers of the righteous; but this is not an absolute safeguard against the transmission of venereal disease if it be present in contagious or inoculable form, no matter how thorough and complete the regimen of cleansing and cleanliness. "He who puts his hand into the fire will surely be burned."

*G. Daniel, of Brussels (*Jour. de Med. de Paris*), states that "syphilis is rarely due to official licensed prostitution, but is almost always owing to clandestine," which is an important observation, and is probably true in those countries where enforced medical inspection of prostitutes has diminished the number of the licensed variety and correspondingly increased clandestines. The latter becoming diseased, and not being subject to inspection and detention, the disease is rapidly disseminated.

As a preventive of venereal disease many plans have been suggested, that those so inclined might continue their sinful practices in security, but none are successful beyond certain limits. Ricord says the "condom is a poor umbrella which the tempest may break or turn inside out, and which at best protects only the head from the storm and does not keep the feet from getting wet." Thousands of these contrivances are sold for the prevention of disease, when they might better be labeled "for the prevention of conception," and in either case the security is at best exceedingly questionable. Bremond declares that this invention "gives no guarantee of safety to any one who trusts in it to combine pleasure with security. The sinners in secret who begin love with Plato, even though clothed in rubber, may end with the midwife armed with forceps." The insecurity of the contrivance constitutes one of its greatest dangers, and, besides, it is conducive to immorality by the evidence of security which it offers. Most of those who have given any thought to the matter can recall deplorable instances of seduction, pregnancy, desertion and disgrace traceable to this invention, when without its implied security the "accident" would probably have been averted. Its use within the bonds of marriage has also been followed by equally deplorable consequences, and many ruined homes might be traced to this source. It is fraught with evil, no matter what the conditions under which used; if in married life from some unforeseen accident pregnancy ensues, and the husband, because of the implied security of the "preventive," suspects others have been trespassing upon his preserves, domestic tranquility is disturbed; if without the bonds of marriage a similar accident occurs, a compromising pregnancy, perhaps a hasty and undesirable marriage, it may be an induced abortion and abandonment of the female to her fate—the girl ruined, the man complimented, lionized, and allowed to go free to perpetrate similar outrages in other and greener pastures.

Such a state of society is to be deplored, discountenanced, and condemned by every pure-minded individual, but the facts remain unaltered, and improvement can hardly be hoped for until a single standard of morality is adopted and enforced; until it shall be the rule for the female to be adequately educated and thoroughly enlightened in human genesis, sexual morality, and kindred matters; until she shall demand that man offer himself in marriage with the same degree of purity, sexually considered, as he expects and demands from the member of the tender sex whom he would espouse. With a

single standard of morality, with an equal education on the part of both, from a sexual standpoint, if the law be transgressed, in secret or otherwise, with or without the use of secure or insecure preventives, each party to the act will be equally guilty; and it will then be unnecessary to appeal to the law to rectify a supposed wrong, as neither will have reason to seek recourse in the law when equally concerned in the matter of guilt. This is untrue under present conditions, and the blame of seduction, so-called, falls upon the sexes unequally.

But we have digressed. The subject of sexual education is one of so much importance that we could not refrain from referring to it in this connection.

It seems strange that we have stringent legal enactments for the prevention of contagious and infectious diseases, that we have rigid quarantine regulations to prevent their general or local dissemination, yet these laws and regulations do not apply to gonorrhea or syphilis; that these two diseases, which may attack nearly every organ or structure in the human economy, which may devitalize the individual and strike at the very basis of society itself, are allowed to exist and perpetuate themselves almost without check or hindrance. That they exist in every stratum of society we have daily evidence. They are insidious, deadly maladies, infectious, inoculable, contagious, transmissible in their nature, yet they are not included in the list covered by legal enactment or by quarantine regulation. The leper, from time immemorial, has been isolated or ostracised; the mildly insane individual is arrested and forcibly detained where harm can not be inflicted upon himself or others; yet those more dangerous than either the leper or the mild lunatic are allowed freedom, to disseminate and perpetuate disease, pestilence, and death throughout the length and breadth of the land.

For some of the ideas suggested in this paper the writer is indebted to an article by Dr. Charles Everett Warren, Boston, Mass., published in the *St. Louis Medical and Surgical Journal*, Vol. lxxiii, No. 1, to whom it is desired full credit be given.

LOUISVILLE.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, January 14, 1902, the President, William H. Wathen, M. D., in the Chair.

Gall Stones. Dr. J. W. Irwin: These specimens are of interest in that they were voided by an effort of nature. The surgeons, as a rule, do these things for the patient. I want the Fellows to see what the *vis medicatrix naturæ* can do with gall stones of large size. Briefly, the history of the case is as follows:

Eight months ago a lady came to consult me from a distant city, accompanied by her physician. She had been ill for eleven years; she suffered from intense pains about the waist, not clearly defined; she had pains sometimes shooting up to the shoulders and again down to the lower part of the abdomen. There was a suspicion at one time that she might have had appendicitis, but the family physician decided that it was not appendicitis. No operation was done. Consultations resulted in the opinion that she had neuralgia of the stomach, or the pain was due to the approach of the menopause. She was then forty-one years of age. When I saw her she was forty-six years, and she presented the appearance of one slightly jaundiced. There was some swelling and some contraction of the rectus muscle, and the trouble had been diagnosed as cancerous.

I relaxed the muscles under the effect of chloroform, made a thorough examination, and found two large gall stones—at least, so diagnosed—very deep down in the region of the bile-passages. The gall stones appeared to be very near the entrance to the bowel. I sent her to her hotel, with a trained nurse to look after her, and ordered her a large dose of olive oil, that domestic remedy so often recommended for relief of gall stones. She took half a pint before going to bed. The next morning she had a very copious evacuation, and passed a gall stone about half the size of the largest one I exhibit. I repeated the dose the following night, and the next morning she passed this large stone—about the size of a large marble—and all the smaller ones, about twenty in number. The last eight months the patient's skin has cleared up and she is in perfect health. I feel sure the impaction was in the common duct. I mention this to show what nature will do without

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

causing destruction of the ducts; I believe if there had been destruction of the ducts we would have had other phenomena to warrant us in believing that the duct was destroyed.

Whether the administration of olive oil had any thing to do with the passage of these stones more than clearing the *prima viæ* I do not know; nor do I pretend to tell you how it acted. Olive oil is not considered by any means a specific in these cases, nor do I report it for this purpose. My diagnosis is that the stones were about ready to drop into the intestine and it took little effort to dislodge them and pass them out. We know that stoppage of the common or the hepatic duct is always attended by a great deal of jaundice.

Discussion. Dr. T. P. Satterwhite: So far as the treatment of gall stones with oil is concerned that, of course, was heard of years ago; but the most marvelous part of the case is that the patient did not suffer more with the passage of these stones. I would be inclined to think that the duct was destroyed and that there was a cul-de-sac formed, and all these stones accumulated in this cul-de-sac and ulcerated through into the bowel. I can not conceive that the duct could be distended to a size sufficient to allow the passage of this largest stone without destroying it.

Several years ago I had a patient with gall-stone colic who suffered intensely. It is true I do not believe a man can stand pain as well as a woman, but the stones he passed ranged in size from the head of a pin to the smallest-size marrowfat pea. Chloroform and morphine had to be administered for the relief of pain. In all the cases of gall stones I have had, where the stones have passed the gall-bladder seemed to empty itself in a short time. This man was under my care for two months before any gall stones passed. He had been treated by several doctors for bilious colic, etc.; he was never jaundiced. When he came under my care I had his stools examined, and finally a small particle was brought to me, and upon examination it proved to be cholesterin. From that time I put him on Carlsbad water, and in less than a week he passed a large-sized wine glass full of gall stones. He has never to this day had any return of his trouble.

Dr. Carl Weidner: This is the largest gall stone that I have ever seen passed without an operation. I have seen quite a number of collections of gall stones exhibited before the various medical societies, and have seen a good many cases in my practice, but have never seen

one as large as this passed in any way except removal by surgical intervention. I can not account for the passage of this stone with so little pain; I do not know the explanation. I would recall to your minds that the bile duct is about the size of a small crow's quill, and in passing through between the coats of the bowel it is very narrow, and that the passage of a stone of this size should not give rise to more pain is difficult to explain.

As far as the treatment is concerned, while I have never made use of it, we all know it is an old remedy. It is thought to increase the portal circulation, the same as cold injections into the bowel have been recommended by some German authorities.

I agree with Dr. Satterwhite that the gall-bladder will sometimes empty itself if it is filled with an accumulation of grumous masses and small stones after the use of any remedy that is at all successful. When we have these large stones in the gall-bladder we may be fortunate enough to have one pass, but it does not necessarily follow that the others will also be expelled. I have repeatedly seen the gall-bladder apparently empty itself of small stones under large doses of Carlsbad water.

Dr. M. F. Coomes: I do not believe that the Fellows are inclined to give sweet oil credit enough. They lose sight of the fact that this oil is not acted upon, except mechanically, until it gets into the duodenum, and in large quantities it is passed through the stomach and begins to be emulsified after it leaves that organ. We know that this oil obeys the laws of capillary attraction with great energy, and for that reason I am strongly of the opinion that it finds its way into the passages occupied by the gall stones and loosens them. I have in mind a case where twenty or thirty quadrangular stones of considerable size were passed. In Dr. Irwin's case I think the oil should receive the credit.

Dr. P. F. Barbour: Dr. Irwin is fortunate in being able to diagnose and relieve this case so promptly. Is it not possible that an adhesion had formed between the gall-bladder and the intestine, and that the passage of these stones was from the gall-bladder into the intestine rather than through the common duct to the intestine? We know that these adhesions do occur, and it is possible ulceration took place there.

A point in the diagnosis which I would like to have Dr. Irwin dwell upon in closing the discussion is: I saw recently stated by some

investigator in Boston who had made a number of autopsies to determine the effect of the presence of stones or other obstructions in the common duct upon the size of the gall-bladder. It seems, the fact is stated, that when the pressure is upon the common duct itself, whether it is pressure upon it or obliteration of the duct from the presence of stone or for other reasons, under these circumstances the gall-bladder is not enlarged; but when the cystic duct is obstructed by gall stones, or is pressed upon by some tumor in its neighborhood, that under these circumstances the gall-bladder will be enlarged. It seems that in a series of fifty cases, in which observation was made post-mortem, this was determined to be the fact in each case. Where the gall-bladder was enlarged the obstruction was in the cystic and not in the common duct.

Dr. E. Moraweck: While visiting last summer in Franklin, Ind., I was informed that Mrs. A. was quite sick, by the physician attending her. After a short time he came down-stairs and in the course of conversation said he had diagnosed gall stones, and as I had just returned from Austria he asked what remedy was now being used there. I told him I believed that olive oil was used in Austria more than any thing else. He administered a large dose to this woman, and two days later showed me a handful of gall stones which she had passed.

Dr. W. H. Wathen: These cases must be looked at, in their final results, in a mechanical way. By some pathological process these stones are formed, and we find them lying in the gall-bladder, in the ducts of the liver, in the hepatic duct, in the common duct, or in the cystic duct. A stone in the cystic duct of very considerable size may be forced into the common duct, or one of considerable size may be forced from the hepatic duct into the common duct, and they gradually dilate this duct and finally discharge into the bowel. The favorite position for the lodgment of stones in the common duct is at the diverticulum, where the pancreatic duct joins, just at the entrance into the bowel. And it is positive that if this large stone came from the common duct into the bowel it was in this position, practically in the walls of the bowel, before the sweet oil was given; the large quantity of sweet oil lubricated the bowel and possibly under and around the stone to some extent, and so increased the peristalsis of the bowel as to force this large stone out, the others following. This would appear to be the rationale of the process if the stone came from the common duct; but, as has been suggested, it is by no means infrequent that

stones of large size, and even sometimes of smaller size, reach the intestine, or even the abdominal cavity, through other channels than the common duct. The gall-bladder may be filled with stones, it may become adherent to the bowel, and finally suppuration occurs and ulceration makes an opening large enough into the bowel for the stones to pass, and the ulceration and enlargement finally disappear.

Two years ago I was consulted by a patient from Daviess County, Ky., who had a sinus at the navel discharging a watery substance—no pus—into which I could introduce but a small probe, which went about three inches under the lower border of the liver. A year before this time she had suddenly suffered severe pain in the region of the gall-bladder, having never had any previous trouble, and never having had any jaundice. In a short time she had an enlargement accompanied with fever, and after a few weeks an abscess ruptured at the navel, discharging a teacupful of pus. Pus continued to be discharged for six months, then the watery discharge as I found it. Upon dissecting out this sinus to its base—about three inches—I came in contact with a gall stone, one twice the size of the gall stone before us, composed almost entirely of a white substance, with some yellow incrustations over its surface. It was lying at the bottom of the sinus, imbedded between the lower border of the liver and the great omentum, which had reached up, forming the lower boundary of the sac and protecting this woman's life. Evidently this stone was in the gall-bladder. This woman had suppuration of the gall-bladder; ulceration occurred; nature, through the great omentum, threw out a protection which united the surface to the anterior abdominal wall, and by that means saved the patient's life.

Recently I operated upon a woman who had been for a year as yellow as gold, and had not passed evidently a drop of bile into the bowel during this time. A stone was found just at the junction of the bowel, where the duct enters the duodenum. The duct was incised and a stone as large as the end of my little finger removed, the woman making an uninterrupted recovery, bile afterward passing into the bowel.

In Dr. Irwin's case, if the stone passed through the common duct into the bowel the fact that the patient did not have jaundice is not at all remarkable, for the reason that just as in some cases of constipation lasting for years there is a channel through which bile passes into the bowel, so that obstruction is not complete. The duct was not com-

pletely obstructed in this case, nor was it destroyed, for if it were destroyed this woman would have jaundice again.

Referring to the question brought up by Dr. Barbour, that if the common duct is obstructed the gall-bladder is not enlarged, this is common to all the secretory or excretory organs of the body. If you will ligate the ureter, in a short time that kidney will secrete or excrete no urine. When you obstruct the common duct so that the bile can not get out, the formation of bile ceases so far as the regular law governing this formation is concerned.

Dr. F. W. Samuel: I am sorry I did not hear the report of the case, and have nothing to say in reference to it except that from the discussion I judge nature has already done for this woman what the surgeon should have done had he been called upon, viz.: a cholecystenterostomy or a dochoenterostomy; the gall stones thus being allowed to pass into the intestine they were brought away by the bowel, just as any other foreign substance would have been. I have never known a case of gall stones to be relieved, or a single gall stone to pass, after the administration of olive oil, but after the administration of large quantities of oil I have seen the passage of soap-stone masses resembling gall stones.

Dr. J. W. Irwin: The reason I made the diagnosis of gall stones was simply because I could feel the stones. The abdominal walls were very thin, the patient was slightly jaundiced, of a brownish-yellow color. I could not define the gall-bladder; it seemed to be absent. Chloroform was administered in order that deep pressure in the examination might be made. The fact that she was not much jaundiced, and the fact that she did not have acute colicky pain, might be accounted for by the long duration of the trouble. She had become inured to the pain, yet pain was considerable. She described it as a deep-down pain in the stomach. The frequent attacks of fever and rigors before she came to see me led me to the conclusion that there must also be a cholangitis. After passage of the stones her skin cleared up, so that now she is as white as she ever was in her life. She has gained thirty pounds in weight, with no subsequent complication or any evidence of inflammation about the peritoneum or elsewhere; this led me to the conclusion since, as well as then, that the stones gradually dilated the common duct and passed through in the natural way instead of there being a false passage. Furthermore, if there had been a false passage it is reasonable to suppose some of the bile might have become

infiltrated and the patient would have suffered from other symptoms since, but so far as I am able to learn she is in better health than she had been for many years. It is a remarkable case, because I have never seen so large a gall stone passed by nature-effort. Very few stones are seen in the operating-room larger than this. The largest gall stone on record, I believe, is in Berlin; that stone weighed seven and a half ounces.

By the gradual process of dilatation covering a period of eleven years, I believe the stones I have shown passed in the natural way.

Dr. Barbour's question is answered by the fact that I could not define the gall-bladder; it was not enlarged.

Case of Twins, with a Double Placenta. Dr. Carl Weidner: The specimen which I present is rather a remarkable one to me, inasmuch as it is the first I have ever seen. It is a double placenta from a twin pregnancy. You will notice the septum between the two placentæ is well shown. I have seen, of course, many cases of twins, but not with a double placenta and a double sac. I simply show the specimen without further comments, as it was not my case.

Discussion. Dr. J. M. Krim: This is the third double placenta I have seen in thirty-two years' experience.

Dr. T. P. Satterwhite: A good many years ago I read a paper before this Society upon the subject of true and false twins. The subject struck me as being an exceedingly interesting one. A physician in Georgia wrote a very interesting article, which stimulated me to look into the literature. The Georgia gentleman stated that where there were two placentæ it was unquestionably a case of false twins. At present I know of one remarkable instance of twins, where you can not see any difference between the two children, where all their likes and dislikes are the same, and it is impossible to tell one from the other. You will remember having seen in some of our drug-stores some years ago a picture of twins which were exactly alike. I knew a lady at the time who had seen these twins in New York, and she told me they could not be told apart, and that their likes, dislikes, etc., were the same. A distinguished physician in France, Trousseau, I discovered in looking up the literature, has written elaborately upon this subject. He recites some remarkable instances in regard to twins. As an example, one was in Paris, the other in Berlin; one had ophthalmic

trouble, and the child remarked that the other twin had the same trouble. Upon communicating with the absent twin this was found to be true. Another instance occurred at their birthday. One was in Scotland and the other was in some distant place; in giving each other birthday presents they selected the same present.

Living within a few doors of where I do in this city there are twins who can not be told apart, except that one has a small hole through the lobe of her ear. The consensus of opinion seems to be that where there is but one placenta and in same sac, then the case is one of true twins—either two boys or girls—and the children will be exactly alike in every particular; their likes and dislikes will be the same. But if there are two placentæ the case is one false twins.

Dr. J. R. Wathen: In regard to Dr. Satterwhite's remarks about twins having the same tastes, disposition, etc. While at college in the East I was associated with twins; they were in my class, both dressed and looked exactly alike, there was no one in the class who could tell them apart. One was especially fond of mathematics; the other was fond of languages, but abhorred mathematics. In the case of these two boys the idea of Dr. Satterwhite seems to have been reversed. The one that was fond of mathematics would recite for both himself and his brother in this branch, and the one fond of languages would make the double play in that department, and it was never discovered by the faculty during the four years they were in school.

Dr. Carl Weidner: Dr. Satterwhite has thrown out in his remarks something that is extremely interesting. I do not know the history of the case in which I showed the specimen, but I believe it is a case of true twins. It necessitates in these cases the fertilization of one ovum with either two nuclei, or else the simultaneous impregnation of two ova possibly escaping from a single follicle. The similarity in character and disposition in future life might indicate that there was one ovum with a double nucleus and the fertilization of both these nuclei at the same time.

Dr. W. H. Wathen: When you have a single ovum with two germinal points impregnated, you have one placenta, and you always have the same sex; they are both male or both female. When you have two separate ova impregnated, then you will have no more resemblance than you would between any other two children born of the same parents at different times, and they may be of either sex.

The essay of the evening, "Surgery of the Urinary Bladder," was read by John R. Wathen, M. D. [See p. 121.]

Discussion. Dr. T. P. Satterwhite: I can not add any thing to the paper, but in this connection want to report a case of bladder trouble that may be of interest. A young lady, aged seventeen years, was under the care of a very distinguished physician in Chicago for six months. Her trouble was the passage of blood with the urine; blood had been present in the urine, according to the microscopist's reports which were sent me, almost constantly during the entire six months. Sometimes there was infinitely more blood than at others. The lady lives in this city, and I have practised in the family for several years. She then came to me. She is in excellent health, typical I might say, and I asked her to bring me a specimen of her urine, which she did, and as far as I could see it was normal. I did not have a microscopical examination made of this sample. She said that usually there was more blood in the urine about the time of her menstrual period, and she brought me a specimen that was loaded with blood. I told her I wanted the twenty-four hours' specimen, and she brought me a quart which was nearly like port wine in appearance. I took it to a very competent microscopist, and he thought he discovered some tubercle bacilli in the urine. In all of the microscopical examinations made in Chicago nothing was said about finding the tubercle bacillus.

I told the patient that I was working in the dark—that her bladder should be examined. She suffered no pain and no discomfort then even in urinating and never had any pain at any time.

I found after she had been some months under my care that blood in the urine was not confined to the menstrual periods, that it was probably only a coincidence that more of it occurred at that time. When the microscopist notified me that he had found tubercle bacilli in the urine I told the family, and stated to them that possibly it was a very serious condition of affairs; but that the microscopists were sometimes deceived, and that I was not willing to advise any radical procedure until I could have further investigation made. I told her the next time she had blood in the urine in abundance to take it to two other gentlemen in order that further microscopical examinations might be made. Neither of them found any tubercle bacilli; they examined a second and third specimen, and none were found. I insisted upon her allowing my friend, Dr. John R. Wathen, whom I

represented to the family as a most competent person to examine the bladder, to make a careful examination of the bladder to determine, if possible, the character of the trouble. I told her I felt satisfied there was no lesion of the kidney; in none of the reports from the microscopists was there any thing to indicate a kidney lesion.

The girl said absolutely that she would not have any examination made, that she was well, felt well, had a good appetite, and would not consent to any examination of the bladder. The mother and sisters, one of her sisters coming here from Texas, insisted upon upon her having Dr. Wathen make an examination of the bladder, to determine, if possible, the nature of the lesion so that it might be treated locally, but her consent could not be obtained. I supposed then there was a villous condition of the mucous membrane of the bladder, that I would wash the bladder out thoroughly, then inject adrenalin chloride and treat her in this way, etc., but I have not been able to get her consent, and she is now as vigorous-looking as ever, still having the passage of blood from the bladder, not probably as frequent as she formerly did.

Dr. Carl Weidner: I had hoped the essayist would dwell somewhat upon the practical points in regard to bladder treatment, inflammatory conditions of the bladder, etc.

Being one of the gentlemen who examined the urine in the case referred to by Dr. Satterwhite, and not having found the tubercle bacillus, I am glad to hear the patient is doing so well. The question must always be borne in mind in examining for the tubercle bacillus that other organisms may be mistaken for it. The female generative organs, as well as the male, may contain the smegma bacilli, and these may be mistaken for the tubercle bacilli.

Dr. M. F. Coomes: I do not believe surgeons to-day do their patients justice without an examination of the bladder. The modern cystoscope is almost as easily handled as the modern ophthalmoscope, and there is now no reason why any surgeon should treat the bladder without making a thorough examination.

Dr. W. H. Wathen: I agree with Dr. Coomes that there is a notorious lack of knowledge as to the methods of technique in diagnosing tumors or diseases within the bladder, and the average practitioner, and I might say the average surgeon, in some of the intricate troubles is absolutely ignorant in diagnosing these conditions. He is ignorant, because he does not pay any attention to the matter,

because he has not studied it, ignorant just as men were ten or twenty years ago when everybody was ignorant in regard to rectal diseases. At that time you would find a first-class surgeon, who was doing excellent work, who knew comparatively nothing about the rectum, an organ which is as easily studied and may be explored almost as easily as the external parts of the body—still they knew nothing about it. The patient went on for years suffering from troubles that neither the surgeon or the practitioner knew any thing about, that could have been easily relieved.

There are many conditions of the bladder, if you know how to make the examination, that can be detected perfectly, and that can be removed and your patient permanently cured, which would otherwise cause the patient to suffer for years. But when you come to extirpating the bladder I am a little skeptical. I heard Dr. Mann read his paper before the American Gynecological Society at Chicago, and heard the discussion upon same. It demonstrates a degree of surgical skill that is commendable, but I have contended that if the bladder is sufficiently diseased to necessitate its removal that its removal will not prolong life to any material extent, just as I have contended, and I find that the profession is coming to the position I assumed at first, that where there is involvement in uterine cancer of the pelvic glands that removal of these glands is utterly useless, for the reason if we do remove them, we do no good, because we can not remove all; there are so many that we can not tell where they are, nor when we get them all away, and if we leave a gland infected with malignant disease not larger than a pinhead, it may in a month be as large as the end of your thumb; hence I have said from the beginning that the practice of dissecting out the pelvic glands as done by Kelly, of Baltimore, and others was simply farcical, that it would not stand the test of time; it has not stood the test of time, and is now being abandoned. I do not believe extirpation of the bladder will stand the test of time, because when this seems necessary the disease has involved so many structures which can not be seen by the naked eye that the operation will do no good, and if there is only involvement of a single part of the bladder it would be better to make a resection and not remove the entire bladder.

Dr. J. R. Wathen: In regard to the case alluded to by Dr. Satterwhite: I made five or six examinations of the patient's urine, and all of them, with one exception, contained pure blood-red blood cells, no

pus cells. This would naturally lead us to believe there is a villous tumor of the bladder walls, or tuberculosis of the bladder, ureter or kidney. The patient being a young woman, I searched carefully for tubercle bacilli and failed to find them in three or four specimens. Dr. Satterwhite brought me another specimen which looked entirely different from the others. I called his attention to it, especially the sediment at the bottom. I noticed quite a number of pus cells in this specimen, and upon examination found a large number of tubercle bacilli. Naturally being suspicious that the organism might be the smegma bacilli or something else, I placed them in alcohol after decolorizing for twelve to twenty-four hours—a method which I had noticed in a German medical journal—this being the manner of making a differential diagnosis between tubercle and smegma bacilli, and the organisms were proven to be tubercle by the staining process. I later examined another specimen and found no pus cells, but found, just as I had in the other specimens, pure blood. The negative finding of pus cells would demonstrate that the trouble was not cystitis. We know that these cases will sometimes improve; there is a quiescent stage that seems to come on, the kidney lesion does not seem to advance, and the patient seems to get almost well. How this occurs I do not know. I have no doubt that at the time the tubercle bacilli were found a little caseous mass in the kidney had broken down, because pus cells were found at no other time.

In regard to the use of adrenalin solution, I saw a case in consultation not long ago—a bladder tumor of the bald type. I advised against operation, and the physician in charge washed out the bladder thoroughly and tried adrenalin solution internally, reporting very good results, but he could not entirely check the hemorrhage. I saw him a few days ago and he said that the woman was about dead; that the growth had infiltrated the vaginal wall, the uterus, and other structures, and as soon as he was able he would bring me the post-mortem specimen.

Referring to Dr. W. H. Wathen's remarks concerning resection of the bladder and removal of the entire organ: Dr. Mann speaks of this as the extreme measure, and advises total removal of the bladder only in certain cases. The bladder is usually the last structure involved in cancerous infiltration of the pelvic structures. Cancer will involve some of the broad ligament, a few of the glands, the uterus, maybe some of the vaginal wall, and later on we notice in performing a vaginal

hysterectomy, for instance for cancer, that infiltration has extended along the line of the bladder wall, the bladder becomes involved, and this is usually the first indication of return of cancer after vaginal hysterectomy. Supposing this to be the point of greatest danger, if we can remove a small section of the bladder wall at the time of the hysterectomy we might relieve this cancerous patient, and I think in well-selected cases it would be of great benefit to the patient to remove a portion of the bladder wall; but I do not believe that after cancer has involved all the surrounding structures, after it has spread out, involving the broad ligament, etc., that removal of the bladder for the cure of the disease is ever indicated.

The paper was necessarily made brief, as I could not take up all the points along this line, but I merely wished to bring out a few modern ideas in regard to bladder surgery.

P. F. BARBOUR, M. D., *Secretary.*

Reviews and Bibliography.

A Manual of Venereal and Sexual Diseases. By WILLIAM A. HACKETT, M. B., Ph. G., M. C. P. S. (Ont.), and N. E. ARNSTAM, M. D., Ph. G. G. P. Engelhard & Co., Publishers, Chicago, 1901. 200 pp. Price, \$1.00.

This volume is nicely printed, and has a handsome appearance. It deals with practical points in a concise manner and discusses the modern appliances used in this line.

The first part treats of gonorrhea; the second of chancroid; the third of syphilis, and the fourth of the psychoses of the sexual system. The illustrations are not quite up to the high standard of the rest of the book.

We heartily recommend it as a condensed and up-to-date manual on this subject.

Uric Acid as a Factor in the Causation of Disease. By ALEXANDER HAIG, M. A., M. D., Oxon., F. R. C. P., etc. Published by P. Blakiston, Son & Co., Philadelphia, Pa.

After a long series of experiments and observations on his own person, in hospitals, and in private practice, the illustrious author has given to the world the "children of his brain" in his book on "Uric Acid as a Factor in the Causation of Disease." The cause of many of the infirmities that heretofore was shrouded in darkness he has shown in the clear light of science to be a deranged metabolism due to an excess of uric acid in the body.

His painstaking investigations, diagramatic and other illustrations, tend to leave in the mind of the reader no doubt as to the accuracy with which he has produced so many important truths. We believe that in due time the book will be read by every physician, and that such reader will join with us in a deep sense of gratitude to its author.

The Four Epochs of Woman's Life. A Study in Hygiene. By ANNA M. GALBRAITH, M. D., Author of "Hygiene and Physical Culture for Women;" Fellow of the New York Academy of Medicine, etc. With an Introductory Note by JOHN H. MUSSER, M. D., Professor of Clinical Medicine, University of Pennsylvania. 12mo volume of 200 pages. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$1.25, net.

Women have at last awakened to a sense of the penalties they have paid for their ignorance of those laws of nature which govern their physical being, and to feel keenly the necessity for instruction in the fundamental principles which underlie the epochs of their lives.

This is pre-eminently the day of preventive medicine. The physician who can prevent the origin of disease is a greater benefactor than he who can lessen the mortality or suffering after the disease has occurred. Any contribution, therefore, to the physical, and hence the mental, perfection of woman should be welcomed alike by her own sex, by the thoughtful citizen, by the political economist, and by the hygienist.

In this instructive work are stated, in a modest, pleasing, and conclusive manner, those truths of which every woman should have a thorough knowledge. Written as it is for the laity, the subject is discussed in clear, comprehensible language, readily grasped even by those most unfamiliar with medical subjects. A valuable and commendable feature of this handy volume of instructive information is a comprehensive glossary of those medical terms necessary to a thorough understanding of the subject under discussion. Without doubt it is a book that should receive the thoughtful consideration of every woman.

Essentials of Physiology. Prepared especially for Students of Medicine, and arranged with questions following each chapter. By SIDNEY P. BUDGETT, M. D., Professor of Physiology, Medical Department of Washington University, St. Louis. 16mo volume of 233 pages, finely illustrated with many full-page halftones. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$1.00, net.

This is an entirely new work, and a worthy accession to Saunders' excellent series of Question Compends. It aims to furnish material with which students may lay a broad foundation for later amplification, and to serve as an aid to an intelligent consultation of the more elaborate text-book. The subject of physiology is covered completely, and the author of the work being a teacher of wide experience the salient points are particularly emphasized. An important feature is the series of well-selected questions following each chapter, summarizing what has previously been read, and at the same time serving to fix the essential facts in the mind. Nearly all the illustrations are full-page halftones, and have been selected with especial thought of the student's needs. In every way the work is all that could be desired as a student's aid.

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SOUTHERN MEDICAL COLLEGE ASSOCIATION.

In another part of this issue we publish the Constitution of the Southern Medical College Association as adopted at the meeting in Richmond, November, 1901. We note with pleasure the determined effort of the Southern colleges to adopt a curriculum fully equal to that adopted by the Association of American Medical Colleges, and we hope that all the schools of the association will literally conform to the requirements in the constitution. It would appear, however, that there is now no reason why the two associations should not merge into one, so that this entire country might unite in laudable efforts to elevate the standard and the dignity of medical education.

In one respect the Constitution of the Southern Association is more far-reaching than that of the Association of American Medical Colleges, in that it deals with the financial question between the college and the student. Associations in the past, and many State boards, have contended that legislation in regard to the amount of fees the student should be required to pay into the school should not be adopted or made effective.

Just here lies the greatest evil that confronts the efforts at reform in medical education, for so long as medical colleges are permitted to publish a schedule of fees such as is adopted by high-grade schools and

afterward write letters clandestinely and promiscuously over the country trying to bribe students—offering to take them at any price they may name—low-grade schools and disreputable methods will continue, and students who are in no sense—intellectually, morally, or in education—prepared to study medicine will be graduated.

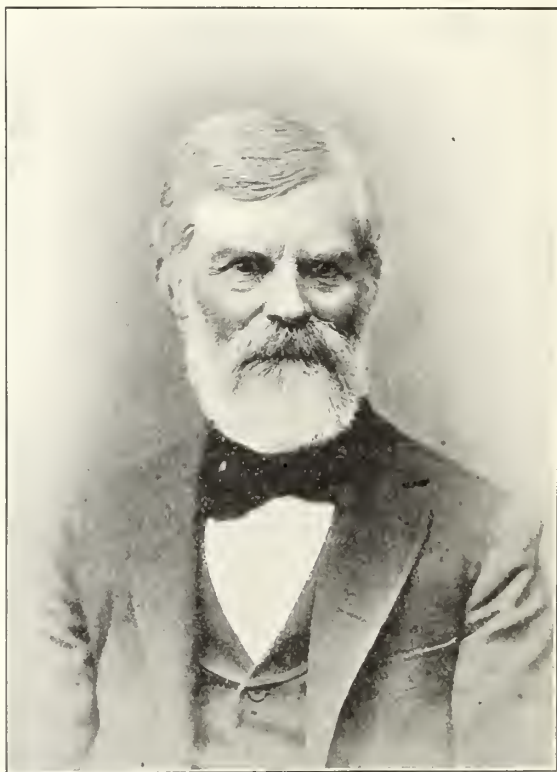
If the high-grade and reputable schools of the United States would join in a determination to recognize no school that admits any student at a minimum fee less than matriculation, \$5.00; professors', \$75.00; examination of graduation, \$30.00; and each of the laboratories \$10.00 (unless compelled to do so because of endowments or State laws), and the various State medical examining boards would do likewise, within five years fifty per cent of our colleges would cease to exist and the remaining high-grade schools would procure better material and do better work, and the profession and the people would be protected against the great evil resulting from the ignorance and disreputable practices of many physicians now being graduated.

Were such requirements adopted, each applicant for an examination before a State board should be required to furnish an affidavit that the school from which he graduated had conformed literally to the minimum requirements of the boards, the school having previously filed a similar affidavit.

PROFESSOR EMIL SCHEFFER.

The recent death of Professor Emil Scheffer removes from our midst one of the most noted men in the State. His life was a quiet, unassuming one, but withal he did much for the good of mankind. He was an earnest and ardent student of pharmacy and chemistry, and his labors were rewarded in 1872 by the discovery of a new method of obtaining pepsin. Prior to that time the acetate of lead had been used in isolating the pepsin, and the discovery by Professor Scheffer that common salt was much better than the lead salts and free from the dangers that were incurred by their use, and much more economical, made his discovery one of the most important of its kind in modern times. Had he been avaricious and selfish he might have died a millionaire, but he was modest, and contented to give his discovery to the world unhampered, and as the result of his generosity many manufacturing chemists of this country have been able to add much to their

fortunes. He was born in Stuttgart, Germany, in 1822, and came to this country in 1849. He was married to Mrs. Kneiss, formerly Miss Olivia Beckham. The result of this union was six children, five of whom are living and were with him at the time of his death.



PROF. EMIL SCHEFFER.

At a special meeting of the directors of the Louisville College of Pharmacy, January 22, 1902, a committee was appointed by the chair to draft suitable resolutions on the death of Professor Emil Scheffer, Emeritus Professor of Materia Medica and charter member of this institution. The committee consisted of Messrs. Simon N. Jones, George Schanz, and Gordon L. Curry. The following was duly presented:

"The grim reaper has again come amongst us and removed from our midst the most illustrious and most distinguished of our association, Professor Emil Scheffer. His life was one that stood out as a prominent example for all to emulate, so full was it of all that was good and worthy, with none of those faults so common among men.

"Patient, untiring, self-sacrificing, loved by his family, loved by his friends, devoid of selfishness, seeking neither riches nor fame, he devoted himself to his profession and conferred great blessings upon the human race as a result of his diligent and painstaking work. We who have been associated with him for years recognize the great loss the profession has sustained. Though living beyond the time naturally allotted to man, he never ceased to take an active and earnest interest in the affairs and the welfare of the college. He passed away from us full of honor, with the love and respect of all who knew him, and in this he leaves to his family a priceless heritage.

"Whereas, We recognize in this affliction the hand of Him who doeth all things well, and whose wishes are beyond question, yet we desire to express our deep sorrow at this great loss to the college and to the community; therefore, be it

"*Resolved*, That in the death of Professor Scheffer the profession of pharmacy has lost one of its brightest minds and one of its most faithful workers, and that the College of Pharmacy has lost a guiding hand that was always outstretched to aid it, either with advice or by example.

"*Resolved*, That we tender to his bereaved family our most heartfelt sympathy in this great affliction, and that we invoke the blessings of Him who alone can comfort them.

"*Resolved*, That a copy of these resolutions be spread upon the records of the Louisville College of Pharmacy, and that an engrossed copy be sent to the family.

"Signed by order of the Board of Directors.

"SIMON N. JONES, *Chairman*,

"GORDON L. CURRY,

"GEORGE SCHANZ."

ONE of the most significant things in connection with the occurrence of tetanus in those who were vaccinated at Camden, N. J., is that nearly all of the cases occurred in from three to four weeks after vaccination, which would eliminate the possibility of germs of tetanus being introduced at the time of vaccination, as it is thoroughly settled that it is from five to nine days after the introduction of the tetanic germ until the disease is fully developed. We hope that the profession will remember this, and not hesitate to go on and make use of the vaccine virus without any fear of tetanus resulting.

CONSTITUTION SOUTHERN MEDICAL COLLEGE ASSOCIATION, AS
AMENDED AT THE RICHMOND, VA., MEETING, NOV. 12, 1901.

ARTICLE I.

SECTION 1. This organization shall be known as the Southern Medical College Association.

ARTICLE II.

SECTION 1. The Association shall be composed of delegates from Southern Medical Colleges whose faculties have signified a desire to become members thereof, have signed the Constitution, and pledged themselves to abide by, and comply with, all the requirements contained therein.

SEC. 2. The objects of the Association are to cultivate closer and more intimate relations between Southern Medical Colleges; to discuss and perfect methods of medical teaching; and to elevate the standard of medical education by requiring a more thorough preliminary training and an increased length of time for medical study.

SEC. 3. The Association shall be composed of one delegate, preferably the Dean or other executive officer, from each medical college belonging thereto, who shall be elected annually by their respective faculties. Each college shall be entitled to one vote in the transactions of the Association; and a representation of a majority of the colleges belonging to the Association shall be required to constitute a quorum for the transaction of business.

ARTICLE III.

SECTION 1. The officers of this Association shall consist of a President, Vice-President, Secretary, and Treasurer (the latter two offices may be filled by the same individual), who shall be elected annually just before the final adjournment of the meeting, and they shall serve until their successors have been elected, and they shall perform the respective duties pertaining to such offices in other similar organizations.

SEC. 2. The meetings of the Association shall be held annually at the time and place provided in the by-laws.

ARTICLE IV.

SECTION 1. Every student, before being matriculated for the first course of medical lectures in any college belonging to this Association, shall be required to possess the following qualifications:

SEC. 2. He shall hold a certificate from some known reputable physician, showing his moral character and general fitness to enter upon the study of medicine. (See form No. 1 appended to this Constitution.)

SEC. 3. He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate from some legally consti-

tuted high school, general superintendent of State education, or superintendent of some county board of public education attesting that he has been regularly examined and is possessed of at least the educational attainments required of first-grade teachers of public schools, or a certificate that he has passed the entrance examination to a University; and a student may be given one month from the date of his admission to submit his certificate of qualification. (See form of certificate No. 2 appended.)

Amend Article IV, Section 3, by adding: "And if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates issued in such cases must have the conditions printed plainly on the face of each."

SEC. 4. A set of tickets showing that the holder has attended one full course of medical lectures in any regular and recognized medical college shall be essential for matriculating for a second course of lectures in any college belonging to this Association; and every student prior to matriculating for a third or fourth course of lectures shall be required to show, by similar evidence, that he has previously taken two or three courses of lectures.

The minimum per cent of actual attendance during any session requisite to credit a student with a full course shall be 80 per cent of the collegiate course; and a certificate of such attendance, signed by the Dean or Secretary, shall in all instances be promptly furnished by the college so attended. Such certificate of attendance shall be required of a student before being matriculated into the next succeeding course.

No ticket or set of tickets shall be accepted as evidence that a full course in 1901, 1902, and thereafter, has been taken unless the Dean or Secretary has endorsed thereon his signature to a certificate that the actual attendance of the student has not been less than 80 per cent; and said certificate shall specify the studies in which the student has passed or failed to pass.

SEC. 5. The following classes of students may apply for advanced standing and obtain it, provided every applicant undergoes a satisfactory examination upon every branch below the class desired to be entered:

- (a). Graduates of Dentistry, of Pharmacy, and of Veterinary Medicine.
- (b). Graduates and matriculates who have completed one or more courses in Colleges of Homeopathy and of Eclectic Medicine.
- (c). Graduates of recognized colleges and universities who have completed therein prescribed courses in elementary branches of medicine, including chemistry and biology.

SEC. 6. The same charges shall be made in each of the courses, except where students are exempt from dissection and from laboratory work by reason of having performed the same before, and are not candidates for graduation; and colleges shall enforce and collect their published rates of charges. In all cases where there is any departure from the highest

published rates in the catalogues, as in the case of beneficiaries, or worthy indigent students, which number shall not, during any one session, exceed twelve (12), the names and addresses of such beneficiaries shall be reported weekly, for the first four weeks of each session, to the Secretary of this Association, who will report the same to every college in the Association.

A violation of this provision shall subject the college so offending to expulsion from this Association.

This law shall not apply to endowed institutions whose benefactions are confined to their own State; or to colleges receiving State appropriations, or whose charter privileges compel them to give free scholarships to students of their respective States.

The following is recommended as the minimum rate of charges allowable by colleges belonging to this Association:

Matriculation Fee,	\$5 00
Professors' Tickets,	75 00
Anatomical Tickets,	10 00
Laboratory Courses, each,	10 00
Graduation Fee,	25 00

ARTICLE V.

SECTION 1. The branches of medical science to be included in a course of instruction shall be Anatomy, Chemistry, Physiology, Therapeutics and Materia Medica, Theory and Practice of Medicine, Pathology, Surgery, Obstetrics, Gynecology, Medical Jurisprudence (forensic medicine), Hygiene, Ophthalmology, Otology, Laryngology, and Neurology, and special laboratory work as hereinafter provided.

SEC. 2. Colleges belonging to this Association shall not recognize the tickets of any college (issued subsequently to January, 1899) which requires only three courses of lectures for graduation.

SEC. 3. Colleges, members of this Association, are free to honor official credentials issued by colleges of equal requirements, except in case of branches embraced in the last year of their own curriculum.

ARTICLE VI.

SECTION 1. Every candidate for graduation must be of good moral character, and must have attained the age of twenty-one years.

SEC. 2. He must have attended, in a regular and reputable medical college, four full courses of lectures, of not less than six months (26 weeks) each, in four separate years, which is construed to mean that no two courses shall either commence or close in the same calendar year—that is, between the 1st of January and the ensuing 31st of December.

The four years' course shall apply to all students matriculating for the first course on or after January 1, 1899. All students who may have taken their first course during the session of 1898, 1899, or prior thereto, and who

may fail to be graduated before January 1, 1902, shall be required to attend and pay for a fourth course.

SEC. 3. He must have dissected in two courses and must have attended two courses of clinical or hospital instruction.

SEC. 4. He must have taken the following courses in special Laboratory Departments, to wit:

First and second year, Anatomy.

First and second year, Chemistry.

First, second and third year, Histology, Pathology, and Bacteriology.

Fourth year, Surgical Laboratory.

"Amend Section iv, Article 6, by striking out the words 'First and second year, Chemistry,' and insert 'First year, Chemistry.'"

SEC. 5. Certificates signed by demonstrators in charge of the respective laboratories shall be accepted as evidence of attendance upon the same; and the time required to be devoted to study in the laboratories shall be determined by the respective colleges.

SEC. 6. The form of the preceptor's certificate, attesting moral character and fitness, and the form of that of the superintendent of education, attesting the educational qualification of the student, shall be printed in each announcement of the medical colleges belonging to this Association.

ARTICLE VII.

SECTION 1. There shall be a committee of three members of the Association, to be known as the Executive Committee, to be elected at each annual meeting of the Association, to serve one year.

SEC. 2. It shall be the duty of the Executive Committee to construe the laws and regulations of the Association regarding all questions bearing upon the management and duties of medical colleges which may be submitted to them by members of the Association during the interim between meetings, reporting construction of law and decisions to the next regular meeting for approval. The said Committee shall also hear complaints from individuals or faculties of medical colleges concerning violations or infractions of the laws and regulations of the Association, as applicable to colleges belonging thereto; and to investigate the same so far as to form a satisfactory opinion as to the truthfulness and justness of such complaints.

SEC. 3. Should the Committee, after due investigation, feel satisfied that the charges which have been regularly presented are well founded and of such a nature as to demand investigation by the Association, it shall be the duty of the Committee to notify the college so accused, furnishing a copy of the charges and findings of the Committee, and also to report the same to the meeting of the Association, with the names of the witnesses examined and such evidence as may have been elicited by the investigation of the Committee, when the Association shall summon such offending college to appear before it at that or some subsequent meeting, either regular

or called, for trial upon the charges and specifications as rendered by the Committee.

SEC. 4. The trial in such cases shall proceed with only the legitimate representatives present; the President of the Association shall appoint some member to conduct the prosecution, and the college accused shall appear in defense through its chosen representative.

SEC. 5. After collecting all the testimony *pro* and *con*, as is usual in such cases, the prosecutor and the defense may briefly review the testimony upon such points as may seem of doubtful significance, when a *viva voce* vote shall be taken upon the sustainment of the charges and specifications. A majority present and voting shall be required to sustain the same.

SEC. 6. If the charges are sustained as provided in Section 5, a vote shall then be taken upon the infliction of punishment. A two thirds vote of all the members of the Association shall be essential to the infliction of the grade of expulsion from the Association, which is the highest grade of punishment. A majority vote of all the members shall be essential to the infliction of the grade of suspension or reprimand.

SEC. 7. A college which has been expelled or suspended may be reinstated by the same vote required to inflict the punishment.

SEC. 8. Amendments, additions to, or alterations in, the Constitution, which change its effect and meaning, shall be introduced in writing at a regular meeting and shall lie over until the next regular meeting before final action, and shall then only be adopted upon a two thirds vote of all the members present.

SEC. 9. A by-law may be enacted or suspended by a two thirds vote at any meeting.

Current Surgical and Medical Selections.

SURGICAL TREATMENT OF ASCITES DUE TO HEPATIC CIRRHOSIS—EPIPLOPEXY.—The artificial production of a collateral circulation by suturing the great omentum to the parietal peritoneum is the procedure suggested by Talma, of Utrecht, and first carried out successfully by Rutherford Morison, of Newcastle. The operation is still on its trial, and the results in selected cases are decidedly encouraging. Patients suffering from cirrhosis of the liver are necessarily bad subjects for operation, and the mortality is relatively high, being probably about 10 to 20 per cent. At the same time, the individuals concerned are otherwise doomed to a life of perpetual invalidism, requiring constant treatment and repeated tapplings to make life bearable. Packard and Le Conte, of Philadelphia (*Am. Jour. Med. Sciences*), review twenty-two cases from the literature, and add two

personal observations. These latter referred to patients who were operated upon at an advanced stage of the disease. One was so far benefited that there was no return of the ascites, and three large venous trunks developed in the anterior abdominal wall, but he died of heart failure and edema of the lungs seven weeks after the operation. The other died of uremia four days after the operation. Roberts, of Philadelphia (Proceedings Phil. Co. Med. Soc.), also records two cases, both operated upon at an advanced stage of the disease, and both died—one the day after the operation, of uremic coma; the other after an interval of six weeks. The author believes the operation should be done as soon as practicable after the diagnosis of hepatic cirrhosis is made. As regards the technique of the operation, he recommends the use of a local anesthetic; the scraping or rubbing of the parietal peritoneum is not regarded as of much importance. The omentum should be rolled up into a sort of cord at the point of each suture, so as to prevent the stitch tearing through its friable tissue, and the stitch should include as wide an area of omentum as possible.—*Edinburgh Medical Journal*.

G. SIMS WOODHEAD, M. A., M. D., Professor of Pathology in the University of Cambridge, in summing up his opinions on the use of alcohol, comes to the following conclusions: May I be allowed to sum up my own opinion of alcohol in a few words. It is a narcotic poison, of which the pernicious effects are to be seen at all times and on every hand. It is a drug which, under certain conditions, may be valuable, but it is a dangerous medicament in the hands of any one but a physician; and even in the hands of the physician or surgeon its exhibition is attended with dangers that attach to the prescription of no other substance in the pharmacopeia; these dangers are not moral only, but physical dangers, resulting from the action of alcohol on the tissues generally, but especially on those of the nerve centers. Its food value under ordinary conditions is practically *nil*, and, put in the most advantageous light, can only be temporary, and then of an extraordinarily slight and, I believe, wasteful character.

TETANUS TREATED WITH ANTITOXIN.—Hennerichouse (Maryland Medical Journal) reports the case of an adult, male, who having stepped on a wire nail, almost pushing it through the foot, developed characteristic symptoms of tetanus about five or six weeks after the accident. Local and general treatment availed nothing, and 20 c.c. of tetanus antitoxin were injected into the back, followed by the same amount the next day, double the quantity the succeeding day, and other injections until 200 c.c. of antitoxin were given, in twenty injections, between January 1 and February 2. Patient recovered. The author offers the following pertinent conclusions:

1. While it can not be proved that the case here related recovered through the use of antitoxin, it is probable, for the reason that improvement followed its use.

2. The difference in mortality is slight between cases treated with and cases treated without antitoxin.

3. The non-efficiency of the serum treatment is due to its administration after the onset of the disease, when the poison has been absorbed by the nerve-cells of the cord.

4. The efficiency of the serum lies in its neutralization of the toxins in the blood, and the prevention thereby of their effect upon the nerve-cells.

5. Antitoxin should be used immediately upon the reception of a suspicious wound, such as a penetrating wound of the foot by a nail, or a toy-pistol wound of the hand, and in other wounds as soon as slight symptoms of tetanus show themselves.

6. Antitoxin will prevent the development of tetanus in animals and man when given prior to operations in hospitals and places where tetanus is prevalent or epidemic.—*Memphis Medical Monthly*.

HEPATIC INADEQUACY AND ITS RELATION TO IRREGULAR GOUT. (British Medical Journal) I. Burney Yeo.—The subject of irregular gout is treated by Yeo, putting the common forms under the general head of hepatic inadequacy. The author begins by defining hepatic inadequacy, by which he means special disturbance of the function of the liver which while stopping short of giving rise to what are generally known and accepted as diseases of the liver, yet lead to impairment of general health. In this way, he thinks, arise almost all those cases which are known as irregular gout. The uric acid theory he finds inadequate, and he calls attention to the fact, as he says, that physiologic and chemical research is not always as helpful to clinical medicine as it might be, unless it is carried out in what may be called a clinical spirit, without dogmatically imposing its conclusions on physiology. As instance of the failure of such research to aid the physician he calls attention to the condemnation of calomel as a cholagogue by the Edinburgh committee some years ago, and shows that the practice of medicine has rejected that conclusion.

Another point is the condemnation of the use of sodium salts and alkalines in the treatment of gout and the gouty state, which has led to another series of practical mistakes. He quotes especially H. M. Lyman as supporting the view that the alkalies and sodium salts are of value in the gouty states. In answer to the question what symptoms are referable to hepatic inadequacy presented by patients with irregular gout he mentions the following: In the first place, the feces are often pale, from the absence of bile-coloring matter, and often very offensive. There is frequently constipation, but there may be diarrhea and some liver enlargement, with tenderness, muddy complexion, yellowish conjunctiva, and a sweet-bitter taste in the mouth, with less of appetite. The urine is highly colored and often of high specific gravity, and usually extremely acid. On boiling, and adding nitric acid, various shades of mahogany color are developed and in some cases the urine looks almost as black as ink. This is very common

in the gouty state. It is also commonly found in functional and malignant hepatic disease. There is another type of hepatic inadequacy which he calls the liver of the seaside, which is hard to explain, which is observed in seaside resorts, and is relieved by change of residence. He believes that some subtle influence exists checking the activity of the bile cells, and thus develops hepatic inadequacy. He mentions other facts which bear out this idea. There are physiologic reasons as well as clinical for incriminating the liver in the production of the gouty state. The liver is specially concerned in the metabolism of carbohydrates—its glycogenic function—and also in the metabolism of nitrogenous material and in the formation of urea and uric acid. In the gouty, the glycogenic function is often disturbed and restored by alkaline medication and, he asks, is it not reasonable to believe that another function of the liver, carried on side by side with this one, is also prone to be disturbed? He also finds the production of the bile disturbed in the gouty. As regards the diet of these cases he does not find a vegetable diet specially applicable, but he has seen great improvement with the exclusive or nearly exclusive diet of pounded meat and full draughts of hot water. It is the simplest diet that can be made, and this is the principle which, he thinks, should be followed. The extremely simple food, limited in amount, causing digestive ease, means also freedom from goutiness. Nature finds some mischief still for idle food to do, paraphrasing Dr. Watts. There is much also in the quality and cooking of the food; often more than in the kind. There is a general impression that gouty people do not take enough exercise. That is not his experience. Excessive muscular activity leads to excess in food, and then trouble comes. The advice to shake up the liver is bad.—*Journal American Medical Association.*

NEW TREATMENT OF PHTHISIS.—Inject through the mouth into the trachea daily, by means of a long curved syringe of the capacity of 60 minims, three drachms of the following: Eucalyptus oil, cinnamon oil, oil of thyme, of each 60 minims; iodoform, 20 grains; bromoform, 10 drops; olive oil (sterilized), 28 drachms. The patient feels the solution trickling into his lungs, experiences an agreeable sensation of warmth, and does not cough.

This operation may be performed at the outset with the aid of a laryngeal mirror, but the expert will soon be able to dispense therewith. The patient should hold his own tongue outside the mouth, between the thumb and finger, by means of a napkin.

This treatment is simple and inoffensive, and the effects vary with the stage of the disease. In the first stage cough and expectoration are generally relieved—even stopped altogether—after two or three weeks' treatment; strength, sleep, and appetite also return. In the two remaining stages the results are not so satisfactory, but still considerable benefit may be obtained, expectoration being less abundant and rendered easier, while strength and appetite improve.—*Mendel, in Medical Press and Circular.*

ARSENIC POISONING.—Arsenic interferes with the normal metabolism, but the exact nature of the chemical changes which occur is not understood. While beneficial in very minute doses, in sufficiently large quantities it may produce inflammation in any part of the body, either applied directly or through the circulation. The stomach may be irritated by direct action, or after the arsenic is absorbed the stomach may become the seat of inflammation from the arsenic in the circulation. The arsenic in the circulation reaches all tissues. Almost all of the symptoms are produced by the action of the irritant in this manner. There can be little or no doubt that the cause of the recent Manchester epidemic was due to arsenic, because there was an absence of any other sufficient cause. Sufficient arsenic was discovered to produce the symptoms of poisoning, and the symptoms were identical with those produced by chronic arsenic taken in other ways.—*T. Lauder Brunton, in Lancet.*

TREATMENT OF PNEUMONIA.—Dr. Thomas R. Brown, after a short review of the various shifting modes of treatment of this disease, says that the failures of the past should not be forgotten, and that no line of treatment should be followed in which the good does not definitely outweigh the bad. Pneumonia is not a disease of the lung solely, but also a general toxemia, and thus in discussing the subject the possibilities of direct and indirect treatment should be considered. The early work of the Klemperers gave much encouragement to the hope of the probable efficacy of an antitoxin; thus far, however, the results have been problematical, but the attitude at the present time is promising. As to the advances along the indirect or symptomatic mode of treatment, the author believes that the best results are obtained by careful nursing, diet, hygiene, and by the systematic use of hydrotherapeutic measures during the entire course of the disease, cold sponging and cold packs being more practical than the full tub. Saline infusions are to be employed in the patients who have faint heart sounds and a weak pulse. One or two pints should be used. Inhalations of oxygen or medicated oxygen vapors are valuable in extreme cases. Morphine for pain, alcohol and strychnine for stimulation, are the most reliable drugs. Caution should be taken that thorough disinfection of the sputum is carried out.—*Maryland Medical Journal.*

INTESTINES, SARCOMA OF.—Sarcoma of the intestine is more common than text-books indicate. It much more frequently affects the small than the large intestine. The ileum seems to be its favorite location. Sarcoma rarely produces stenosis. Dilatation is more frequent. Usually it grows from one side of the bowel entirely. The diagnosis is difficult and will always remain obscure; still, if a smooth, freely movable tumor be found in the abdomen, unless it can be otherwise satisfactorily accounted for, one should be reminded of the probability of sarcoma of the intestine, especially if there is also present the general picture of sarcoma, with its peculiar anemia. C. Van Zwalenburg (*Jour. Amer. Med. Association*).

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

REPORT OF A CASE OF CANCER OF THE STOMACH.*

BY WILLIAM A. JENKINS, A. M., M. D.

*Lecturer on the Practice of Medicine and Assistant Demonstrator of Anatomy in the
Kentucky School of Medicine.*

T. S., male, colored; single, aged fifty years, a day laborer by occupation, came to me for treatment in December, 1900. In so far as I was able to judge from questioning him there was no direct evidence of syphilis, tuberculosis, or cancer in his family. He states that both of his parents died in a dropsical condition; patient had typhoid fever at the age of twelve. He gave a history of two or three attacks of sub-acute articular rheumatism.

Aside from this he was exceptionally healthy in his younger days; passed the physical examination for service in the regular army, and served for five years at Fort Sill. Patient denies syphilis, and physical examination fails to show any evidence of either syphilis or tuberculosis; states that he drank a great deal of whisky, and that he habitually took a drink before breakfast. The patient first noticed his trouble in July or August, 1900. At that time he began to have indigestion, as he termed it; his appetite was variable, and he was troubled some with constipation; there was a feeling of fullness after meals, with occasional regurgitation into the mouth of particles of food and sour material. Symptoms gradually became worse; he began to have attacks of pain in the epigastric region, increased on pressure; noticed some loss of flesh; felt tired and weak, and had no strength. He began

* Read before The Kentucky School and Hospital Medical Society, January 23, 1902. For discussion see page 178.

to vomit about the first of November, 1900. At first he vomited about once in six or eight days.

This history brings the case up to December, 1900, when he first came to me. At his first visit I made a thorough and careful physical examination of the man. He possessed a large, emaciated frame. The examination of the chest was negative; heart perfectly normal, lungs sound. No evidence of arterio-sclerosis. Patient complained of an occasional difficulty in swallowing.

Abdominal examination: Inspection negative; palpation disclosed a sense of resistance; a mass just to the left of the xiphoid appendix and under the margins of the cartilages of the adjacent ribs on the left side. There was dullness on percussion in the same area, and pain on pressure. No deformities, no paralysis, no disturbance of the nervous system; in fact, the man did not exhibit any evidence, either organic or functional, of derangement of any organ or part of the body except that group of clinical symptoms and physical signs which pointed to his stomach trouble.

Urinalysis as follows: Acid reaction; specific gravity 1,030; a sediment of urates; no albumen, no sugar; a few epithelial cells; no casts; urea 1.6 per cent; uric acid and oxalate of lime crystals present. Vomiting was now occurring every two or three days, and consisted of a pale, sour, watery fluid, containing undigested food. Never at any time throughout the case was there the least appearance of blood, coffee-ground or otherwise.

I suspected and suggested cancer of the stomach, and in my own mind diagnosed the case as such. I desired to make use of a test-meal and the stomach-tube, but the patient would not permit it. However, I obtained some of the vomitus while it was fresh, on two separate occasions. An examination of this material showed total acidity .55, free hydrochloric acid absent, lactic acid present.

The man came to me from time to time, and continued to complain of difficulty in swallowing; said that he could hardly swallow at all. I gave him some water to drink before me. He was unable to place the glass to his lips and empty it without removal, but was obliged to take a small amount of water in his mouth, swallow it, rest a moment and take another swallow, and so on. During the months of February and March, 1901, the emaciation was becoming extreme. I requested him to have himself weighed; he did so, and found that he weighed 118 pounds, his normal weight being between 160 and 170 pounds.

Some edema of the ankles made its appearance at this time. His urine was examined again and showed acid reaction; no albumen; specific gravity 1.025; no sugar; a few granular casts; uric acid and oxalate of lime crystals. He now vomited at almost any time, sometimes twice a day. The difficulty in swallowing, taken in connection with the situation of the tumor mass on examining the abdomen, led me to the opinion that the chief point of involvement was about the cardiac orifice (which conclusion the post-mortem confirmed).



A—Cardiac orifice of stomach, where esophagus was severed. B—Spleen. C—Interior of stomach.
D—Pyloric end of stomach.

When the man first came to me I placed him on a liquid diet, chiefly sweet milk and broths, such as oyster, beef, mutton, and chicken broth. After feeding he was given two teaspoonfuls of the following combination: Phenolated essence of pepsin, diastatic essence of pancreaticus, āā oz. iv. During the last two months of his life I depended entirely on peptonized food, chiefly milk and liquid peptonoids, usually adding a little crushed ice, as it seemed to render the nutriment more palatable to the patient. For the nausea I used a tablet containing cocaine, gr. $\frac{1}{2}$; oxalate of cerium, bismuth subnitrat, āā gr. iiss. The tablets were given when required. On the 7th day of May, 1901, the man died. A post-mortem was held. I removed the stomach, and present it for your

consideration in connection with the history of the case. The specimen is a very interesting one, and is well preserved, as you see. The stomach, spleen, left kidney, and the diaphragm were all adherent in one mass; also a part of the transverse colon and a small portion of the abdominal aorta were so bound up by adhesions that they had to be removed with the stomach. The greater portion of the stomach was involved, the point of least involvement being the pyloric end. The retro-peritoneal glands were enlarged and hardened; there was some involvement of the thoracic lymphatics. The cardiac orifice was so stenosed that you could hardly introduce an ordinary lead pencil into the opening. An incision was made into the stomach and its interior was examined carefully for ulcerated areas; none were found. I present some microscopical sections which were taken from different parts of the stomach and from the peritoneal glands. If you will look at them under the microscope you will see how prettily they illustrate the method of growth and the arrangement of the non-ulcerative or cylindrical cell type of carcinoma.

The chief feature of this case to me personally is that I was able to obtain a post-mortem—to see with my own eyes and examine with my hands the conditions and relations of the various abdominal organs, as well as to examine sections of the stomach with the microscope—thus confirming my diagnosis and indelibly imprinting the case on my mind. This opportunity, as you all know, is very rarely obtained in private practice.

As regards the etiology of this case I have very little to say. The medical profession are not agreed definitely on the cause of cancer. Heredity, age, abuse of the stomach from eating or drinking, germs, and the formation of cancer on an old ulcer base, are the principal things mentioned as etiological factors in the production of cancer of the stomach. I know that the patient was addicted to alcohol, and I have his statement that both of his parents died in a dropsical condition, and that is all the positive information obtainable that would tend to throw any light whatever on the cause of the trouble.

The pathology has been pretty well covered in the report of the case and by the exhibition of the specimen itself, showing very nicely the unusual amount of involvement at the cardiac orifice, the extensive adhesions and the lymphatic involvement. The stomach is markedly reduced in size.

In the series of forty-five cases reported by Osler, ulceration was present in thirty-five. Metastasis occurred in thirty-nine cases of this

same series, making 86.6 per cent. "The liver was the seat of metastasis in twenty-three cases; the peritoneum in eleven; pancreas in eight; bowels in eight; kidney and lungs each in four; pleura in three; spleen and diaphragm each in two; ribs, vertebræ, skull, ilium, femur, heart muscle, pericardium, abdominal wall, vesico-rectal cul-de-sac, and the ureter each in one case." Lymphatic involvement in Osler's forty-five cases as follows: "The gastro-hepatic glands, twenty-one times; the peritoneal, nine; posterior mesenteric, six; the supra-clavicular and posterior mediastinal, two; iliac, bronchial, pericardial, anterior mediastinal and axillary, each in one case."

The symptoms in the case I report were fairly typical, with possibly two exceptions: First, the pain toward the last was not so intense as to require the use of opiates; second, there was no coffee-ground vomit, the growth being of the non-ulcerative type.

The prognosis is invariably fatal; the patient usually dies within a year. A small per cent of cases last eighteen months or possibly two years. In so far as treatment is concerned, I think I adopted the only rational plan of treatment, viz., the symptomatic plan.

Operations offer very little in this class of cases—practically they are never curative, but only palliative, and that generally for a very short time. Just consider for a moment the possibilities along the line of metastasis and lymphatic involvement, from the point of view of the statistics quoted above. (And those cases in which neither metastasis nor lymphatic involvement is found are rare, indeed.)

And again, in most every case when you open the abdomen you will find that general nutrition and the organs of nutrition have suffered more than you thought they had. Thus the process of recovery after this class of operations is notoriously slow and unreliable.

In looking over the tabulated statistics, including all varieties of operative procedures for cancer of the stomach, we find that the operative mortality alone ranges from ten to thirty per cent. That is to say, from ten to thirty per cent of all cases operated on die from the effects of the operation itself. From the standpoint of the surgeon the operation is a success if the patient is able to be carried away from the infirmary. And in very few instances is there any attempt made to trace the case after that time. Even in cases where the so-called radical operation was performed, in the literature at my command I have found very few cases reported where the individual was kept under observation for a period of six months, to watch for possible

recurrence. In about ninety per cent of all cases you are obliged to use opium or some of its derivatives for the relief of the intense pain which occurs late in the case. Lavage is occasionally useful. The food or nutrition problem assumes the position of prime importance in these cases. The stomach early loses the power of complete digestion, and possibly later in the case loses almost all power of either digestion or absorption. Early in cancer cases, possibly before we recognize the true nature of the disease, we use antiseptics, digestant mixtures, and bitter tonics, but sooner or later we are obliged to resort to the use of peptonized or predigested foods—foods that are ready for absorption, and consequently do not tax the stomach. In cases of extreme irritability it is occasionally necessary to resort to rectal alimentation for a few days, then cautiously return to feeding by the mouth again, the variety, quantity, and quality of food to be administered in each case depending in part on the condition and peculiarities of the patient, and in part on the skill and judgment of the attending physician.

LOUISVILLE.

CHOLELITHIASIS.*

BY CARL WEIDNER, M. D.

Gall stones were first observed in 1565 by Johann Kentmann, of Dresden,¹ and have since been described by many observers. Th. Sömmering, in 1795, gave us the first accurate investigations into their structure, and good clinical accounts of the disease. F. A. Walter, a year later, carefully described and figured the rich collection in the museum at Berlin.² Since the discovery of cholesterin by Fourcroy and Thénard we have an accurate knowledge of their chemical composition.

Gall stones are primarily mostly found in the gall-bladder, although concrements may be formed in other parts of the bile-channels. They are more or less firm, of various shapes, globular but mostly polyhedral, faceted, and smooth. Their size varies from that of a millet seed to that of a hen's egg; color white, yellowish, or mottled yellowish-brown to olive-green or black. Rarely found single, they occur in large numbers, many hundreds to thousands (7802, Otto's collection). Specific gravity is greater than that of water up to 1.966; they sink in

* Read before the Louisville Clinical Society, January 28, 1902. For discussion see page 193.

water. Most frequent in females, probably on account of pressure upon the bile-ducts by tight lacing and sedentary habits; rare in youth; most frequent after forty years. They may be homogeneous in composition, or compound—the latter having a nucleus, a shell, and a rind. They are the result of incrustation of an organic substance derived from the mucous membrane of the gall-bladder or bile-ducts. Stagnation of bile in the bladder favors this deposition and disease of the mucous membrane, leading to desquamation and degeneration of the epithelium, and in this debris the elements of bile, cholesterin, bile salts, and pigments and earthy salts of lime and magnesium are deposited.³ Formerly this mode of origin was thought to be purely mechanical, occurring in inspissated bile, but something else is needed besides this, and this something has for some time been recognized to be a catarrh of the mucous membrane, resulting in the increased formation of mucus, desquamation and degeneration of epithelium, migration of leucocytes, etc. Like in other inflammatory diseases, infection by various bacteria has been found to be the essential cause of this disease of the mucous membrane. It is in this relation that Naunyn spoke in Paris, in 1900: "The knowledge of cholelithiasis has undergone a complete transformation in the past ten years. Etiology and pathogenesis are at present governed by infection, and, supported by this, surgery strives to monopolize the therapy."⁴

Various bacteria have been found in the gall-bladder, such as bacillus typhi, bacillus coli communis, streptococci and staphylococci, bacillus pneumoniae (Fraenkel), and the question naturally arises whether they may be directly or indirectly responsible for the formation of stones. Many chemical observations, combined with bacteriological examinations, favor this view, and artificial production of gall stones has been successful in the hands of several experimenters by infecting the gall-bladder with various forms of bacteria.

Naunyn reported a case of typhoid infection followed by gall stones in a boy fourteen years old. Mignot produced gall stones experimentally with various bacteria; Mijake also, by first narrowing the cystic duct and then injecting cultures of bacillus coli into the gall-bladder. Ehret and Stoltz, in collecting data on the relation of typhoid bacilli to inflammation of the gall-bladder and gall stones, cite an interesting case of Rokitski, who found typhoid bacilli in the center of fifty-eight small cholesterin stones, as well as in the purulent contents four weeks after the onset of the typhoid fever.

Injections of typhoid bacilli into the ear-vein of a rabbit were made by Cushing.⁵ Two days later pure cultures of the bacillus were received from the gall-bladder and the duodenum. Contrary to the general views, he looked upon the bile as a good culture medium for most bacteria. DaCosta,⁶ in 1898, collected fifty-eight cases of typhoid cholecystitis, with thirty-nine deaths and fifteen recoveries. Half of the latter were operated successfully. At a later period, 1899, he reports three similar observations of his own, ending in recovery.

Some authors believe that infection may take place through the portal circulation (Cushing, Fuetterer), others that it takes place from the duodenum, following the ducts upward (Gilbert, 1894; Richardson). Lettienne found bacteria in the gall-bladder, with lesions elsewhere in the body, in twenty-four out of forty-three cases; in the eighteen remaining cases the bile was sterile.

Richardson has observed agglutination and clumping of the bacillus typhi and bacillus coli in the gall-bladder, and suggests the probability that the clumps may form the nucleus of a gall stone, as in the case of Rokitski, mentioned above. He also agrees with Naunyn and others that simple presence of bacteria in, or their introduction into the gall-bladder are, as a rule, not sufficient to cause inflammation or stones, but that some other factor is needed, such as traumatism or some hindrance to the outflow of bile from the gall-bladder, as by stricture or compression of the cystic duct, a stone in the neck of the bladder, etc. (Riedel, Naunyn, Cushing, Mignot.) Osler mentions the infection of the gall-bladder and the possibility of gall stone formation by typhoid infection.

Dauriac, Wunschheim, Eisendraht,⁷ Marsden,⁸ and others have described typhoid cholecystitis. General experience seems to favor the conclusion that mild infection of the bile-channels and the gall-bladder may be counteracted by an antiseptic property of the healthy bile; that even gall-bladders containing gall stones may give rise to very little trouble as long as the cystic duct remains open and allows free access and egress of bile. When, however, the neck of the bladder or the duct becomes blocked by a stone the picture usually changes for the worse; in some cases the bile becomes viscid, thick, tarry. In the majority of cases the bile disappears and the gall-bladder becomes filled with mucus and serum, the hydrops vesicæ felleæ, or with pus. It has long been recognized that sedentary habits, excess in eating and drinking of alcoholics, tight lacing by pressure upon the cystic or common

ducts, etc., act as predisposing causes of the disease. Riedel, in addition, accepts some unknown disposition.

The symptoms and course of the disease differ very much in different cases, according to whether the stones remain latent in the bladder or whether they pass through the ducts successfully out into the bowel, or whether they become impacted in either cystic or common duct. Stones may remain for years in the gall-bladder without causing trouble and without being diagnosed. A larger stone having occluded the neck, "hydrops" will usually develop, and may remain for years or a lifetime. Acute inflammatory attacks of this hydropic gall-bladder with a stone blocking its neck, form, according to Riedel, the most frequent cause of hepatic colic. Moderate jaundice may or may not be present in these cases, caused either by contiguous swelling of bile-channels or by pressure of the distended gall-bladder upon the common duct. Thus far we have to deal practically with a localized disease of the gall-bladder. Small stones may escape into the cystic and common duct, and into the bowel, with more or less severe symptoms of colic, and the condition may be temporarily or permanently relieved—temporarily by recession of the stone into the gall-bladder and arrest of the inflammatory condition; permanently if only small stones have been present and have all escaped into the bowel, or if the largest stone has passed and allowed the remaining smaller ones to follow in its course. This latter is what Riedel calls the completely successful attack.

Pain is one of the most prominent symptoms of gall stones. It is usually preceded by a sense of intense fullness in the region of the liver, that comes on several hours after meals. Pain is located over the liver, over the gall-bladder, toward the umbilicus, toward the right shoulder, sometimes toward the epigastrium; it is intense and paroxysmal in character, causing great agony, sweating, and collapse in some cases. Death has resulted on account of shock by the pain without any other lesion being present. Vomiting usually accompanies severe attacks; the contents of the stomach are followed by bile in large quantities; sometimes the presence of a gall stone has been detected in the vomited matter. The bowels are mostly inactive; the urine is scanty and high colored, particularly after an attack, and contains more or less bile color. Besides pain there is tenderness on pressure. This may remain several days after an attack, while pain leaves at once after the attack is over. Paroxysms occur repeatedly until the stone has been passed or has receded into the bladder. Then

more or less jaundice will result, with symptoms of a mild gastritis. In some cases there is moderate fever, and this is always present in cases due to catarrhal inflammatory conditions of the bile ducts. Examination of the stools after an attack may aid us in making a positive diagnosis, as well as being one of the symptoms, and may prove the presence of a stone if such stone has been small enough to pass. In some cases we may find grumous masses of biliary matter in the stools. A stone may pass, or it may recede into the gall-bladder or become impacted. In the latter instance the symptoms may vary as to whether the stone becomes impacted in the cystic or common duct, and whether the occlusion is complete or whether there is trickling of bile around the impacted stone. Trickling of bile may occur, as has been described by Fenger, by the so-called ball valve action of the stone; bile will be enabled to pass at intervals. This is especially described by Fenger, and constitutes what he calls the intermittent type of the trouble. Obstruction of the common duct is the worst occurrence; it is followed usually by inflammatory changes in the mucous membrane of the duct, severe and more or less constant icterus running a chronic course; we may have repeated attacks of pain, intercurrent attacks with chills and fever, temperature running up as high as 104° F. Jaundice becomes more constant and deeper after each paroxysm, the urine is highly colored, and secondary changes are severe; among these are enlargement of the liver due to extension of the catarrhal inflammation along the general bile system; the gall-bladder is enlarged and filled with bile, or with mucus and serum, or it may be entirely empty, this latter particularly if there is another stone present in the gall-bladder. Suppurative inflammation of the bile channels is a very common occurrence, and also we may have suppurative disease of the liver substance itself; these give rise to the febrile symptoms.

Ulceration and perforation may occur in any direction in the neighborhood, and a fistula may be established. Perforation occurs most frequently, after adhesions have formed, into the duodenum, into the colon, into the stomach, or externally through the abdominal wall. When death occurs it is usually from exhaustion, cholemia, and septicemia, assisted by one of the various complications, such as cardiac disease, nephritis, etc. The duct may become very much enlarged by the presence of a stone, and this we must look upon as a strong effort upon the part of nature to effect a cure.

If the stone is in the cystic duct the symptoms are different; the liver does not suffer as in the previous case; there is no direct reason for enlargement; the gall-bladder, however, enlarges in most instances considerably, does not contain bile, but becomes filled with mucus or serous fluid; in other words, hydrops is established, as already spoken of. In a few cases pus will form; then we have symptoms of acute suppurative inflammation, chills, fever, swelling, pain, tenderness, nausea, vomiting, and peritoneal symptoms. The symptoms may simulate hepatitis, appendicitis, intestinal obstruction, pancreatitis, etc.

Another result may be atrophy and shrinkage of the gall-bladder. The diagnosis is in any case most important, at the same time in some cases it is difficult or almost impossible. We have to watch the case for some time. Many of the symptoms are in common with other diseases, and the only positive sign in some cases will be to see the stones pass or to feel the stones in the gall-bladder, which can sometimes be done. If one stone has passed with facets, we know there are more. If one stone has passed which is round, we may be in doubt. We have to study the case in its entirety; age, sex, possible family history, all are important elements to be considered. Previous attacks of colic, pain in the region of the gall-bladder followed by jaundice, symptoms of duodenal catarrh, constipation, stools devoid of bile color—all these help to make the diagnosis probable.

Enlargement of the gall-bladder with obstruction of the ducts must be differentiated from tumors of the pylorus, hydro- and pyonephrosis, sarcoma of the kidney, floating kidney, ovarian cyst, tumors of the gall-bladder itself, tumors of the liver (carcinoma); we must include, in addition to these, hydatid and tumors of the lymph glands. The locality in each case will help us, especially if the case is watched from the beginning. The site of the gall-bladder, as is well known, is at the point of intersection of the border of the ribs on the right side with a line drawn from the acromion process of the shoulder to the umbilicus—this according to Musser—or to the symphysis pubes, according to Janeway.^{9, 10} The shape of the tumor is pyriform, lobular, or conical, more or less elastic or even fluctuating. Calculi may sometimes be felt, and impart a grating sensation.¹ Aspiration of the fluid will help in some cases, but as a rule this is a risky interference except adhesions have formed. Dullness is continuous with that of the lower margin of the liver; as a rule in tumors of the kidney and in floating kidney this is not the case, but the bowel is pushed in front of the

latter and we get an area of resonance. Changes in the urine will help us in renal disease. Tumors of the liver are mostly cancerous or hydatid. Cancer causes more nodulation, progressive enlargement of the liver, with jaundice, emaciation, pain, and cachexia. Hydatid disease causes tumor, but it is painless, slow in its course, may yield a fremitus and cause little disturbance. Multiple hydatids of the liver, however, resemble cancer very much. Single abscess of the liver may simulate enlarged gall-bladder, but is usually more fixed, continuous with the liver margin, and if we can watch its development we will find it is at first hard, later on fluctuating, and is accompanied by more marked and severe constitutional disturbances. The history of ulcerative disease of the bowel will help us. Cancer of the gall-bladder must be diagnosed from distended gall-bladder due to calculus obstruction. Prolonged observation will help us, otherwise it may be difficult. In cancer the tumor is more fixed, more painful, very tender; there is emaciation, cachexia—all of these occur after a time. Jaundice is not a necessary or constant symptom, but depends upon pressure-effects upon the bile ducts.

The exact relation of cancer to calculi is quite interesting. Calculi seem to act as an indirect cause of cancer. Musser quotes the occurrence of seventy-eight cases of cancer of the liver, and fifty-two cases among these gave the history of gall stones. Sixty-one out of the seventy-eight cases were in females, which is also an interesting observation.

Treatment. The indications for treatment are several. First is to relieve the attack and prevent others, if possible, by proper medical, dietetic, and surgical means, and second, to treat the sequelæ and complications. If seen during the early part of the attack, of course the indication is to relieve the pain. Morphine, or a combination of atropine and morphine, is most useful. One quarter to one half grain morphine may be given, repeated if necessary, bearing in mind that we may have the accumulative effect of this drug after sudden cessation of pain. Various other anodynes may be used for the relief of pain and spasm. Hot, wet applications over the abdomen lessen vascular tension and muscular spasms. With the view of lessening the catarrh of the duodenum as well as the bile ducts, which may cause some slight obstruction, the alkaline waters have been used. Bicarbonate or phosphate of soda in hot water are excellent. Salicylate of soda is a favorite remedy with many. Olive oil in large doses, as much as half a

pint or even a pint, given by the mouth, has been used. We can not say that it can do any more good than to stimulate intestinal peristalsis and act as a laxative. Cold water injections into the rectum have been praised by Mosler and Krull. The ideal treatment, of course, would consist in dissolving the stones, but solvents for gall stones we do not possess at the present time. The mineral waters, combined with various alkalies, have been used for a long time; the most prominent of these is Carlsbad water or Carlsbad salts. The latter is best given in one or two drachm doses in a pint or a quart of hot water on an empty stomach.

Winkler has reported good results from the sulphur water of Bad Neundorf, combined with the sulphur bath. It increases the fluidity and quantity of the bile, and thereby increases pressure in the gall-bladder.² During an attack we may use the general warm bath with view of relaxing the tissues and favoring expulsion of the stone. The diet should be plain, largely vegetable; simple broths, buttermilk, or skimmed milk, are excellent. Alcoholic and malted drinks are to be avoided. Eggs in large quantity should be discouraged, because they contain a large percentage of cholesterin, about one half of one per cent. Bread and other substances possessing this agent also should be limited in quantity.

The treatment for relief of the disease itself we must acknowledge to-day, just we have done for many years in regard to appendicitis, must be referred to the surgeon. Gall-stone disease has practically become a surgical disease, and this is one of the most important points to recognize. We must insist also that the operation in most instances must be done early if it shall be successful, in order to avoid the deleterious effects and complications.

I will touch upon the operations only very briefly. Operative measures have been strongly dwelt upon by various authors. Some insist that every case ought to be operated upon, others draw the indications more closely. Riedel⁴ gives the following indications for surgical treatment: Do not operate upon a patient who has typical symptoms of shock, pain, icterus, etc., who passes small stones from the bowel. Even repeated attacks, with the passage of small stones, do not indicate operation. Do not operate if after several unsuccessful attacks a successful one occurs, with the passage of a large calculus; this may open and dilate the ducts and allow the passage of others.

Operation is indicated (a) if any unsuccessful attack occurs without jaundice, which means the presence in the bladder of stone, and acute

inflammation with attempts of the stone to pass the neck of the gall-bladder. It is desirable to extract the stones before they are pushed down into the ducts. This ought to be done in every case. (b) If, after repeated unsuccessful attacks, a stone is thrown into the common duct and becomes impacted there. A few weeks' observation may be necessary to make this diagnosis.

In order to follow these indications it is necessary not only for the physician to make the diagnosis, but he should try to be clear in every case about the location of the stone, its probable size, and about the character of the contents of the gall-bladder. The great underlying principle is to operate before secondary complications occur, before suppurative inflammation of the bladder and ducts occurs, before there is ulceration and perforation, with the danger of peritonitis and inflammation of the biliary passages particularly.

The operations most frequently called into requisition are cholecystotomy, cholecystectomy, choledochotomy, and cholecystenterostomy. The objects of the different operations are to remove the stones, or to relieve the distended gall-bladder and to drain away any infectious material that may be present. I would only add here a brief review of the subject, leaving the discussion of the various operations to the surgeons present. The operations mentioned have each an especial indication. It seems plausible that the operation of opening the gall-bladder and draining it ought to be done in all cases where there is pus in the bladder, or where there are one or more larger stones, and if a stone has passed down into the common duct this duct should also be opened and the stone removed. It is claimed that opening the gall-bladder has a remarkably good effect in some of the cases that have suffered severe infection, giving rise to drainage of the poison. Kehr has even drained the hepatic ducts themselves in cases of severe general infection of the bile-ducts. Some of these operations are comparatively old, but the majority of them belong to the latter part of the nineteenth century. Bobbs, an American (Indianapolis, Ind.), in 1867 performed the first cholecystotomy done in one sitting. Langenbuch, in 1882, performed the first cholecystectomy, and Kneimmel undertook the operation without, and Courvoisier with success shortly afterward. Cholecystectomy is advised by all the authors that I have been able to consult only in cases where we can have an aseptic operation, in those cases where the gall-bladder is contracted and where we have no suppuration. In that case the abdomen should be closed without

drainage. Kehrer has gone further and has opened the cystic duct and also drained the hepatic ducts. In cases of severe infection, where we have a general cholangitis or even stones in the hepatic ducts and in the liver, certainly no operation promises much.

As a point of historical interest I will add that, in 1795, Sömmering proposed opening the gall-bladder if it was adherent to the abdominal walls. Richter, in 1795, also proposed—and he had a very good knowledge of the disease—that the operation should be done in two steps, opening the abdomen down to the peritoneum, then applying substances which would cause inflammatory adhesions, and a few days afterward opening the gall-bladder, as was done by Köenig in 1892.

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LOUISVILLE.

Reports of Societies.

THE KENTUCKY SCHOOL AND HOSPITAL MEDICAL SOCIETY.*

Stated Meeting, January 23, 1902, the President, William A. Jenkins, M. D., in the Chair.

Sebaceous Cyst. Dr. M. F. Coomes: I present this specimen more as a curiosity than any thing else. It is a sebaceous cyst which was removed from the sublingual region. The patient was a man about twenty-five years of age. The peculiar feature about the case is the unusual size of the cyst; it measures one and a half inches in diameter. It occupied all the space between the tongue and skin in the sublingual region. An opening was made underneath the chin, and after evacuating the cyst the sac was easily removed. I think that, like all tumors of this class, it came originally from the skin.

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

A New Apparatus for Preventing X-Ray Burns. Dr. J. T. Dunn : On account of the danger of burns from the X-ray, which we have heard of and which we all fear since we have been using the X-ray for therapeutic purposes, it has become necessary to encase the Crookes tube in a box and enclose it entirely, except as stated, so that you are able to direct the light upon that portion of the body to which it is intended to apply the treatment. If only a portion of the body the size of a silver dime is to be acted upon by the X-ray, as is sometimes the case in removing superfluous hairs, for instance, the X-ray, by this device, may be directed to this portion without other portions of the body beneath the Crookes tube being in the least subjected to the influence of the rays.

For this purpose I have devised the wooden box herewith exhibited, which retains the light, only allowing the escape of a ray of such size as may be desired to play upon the part to be treated. The outside of the box, as you will see, is simply plain wood, but of course the X-ray will go through this wood just as though there were no substance between the ray and the part to be treated, therefore the box is lined with the heaviest grade of roofing tin; not only that, but I have reinforced it by slipping in an extra plate on the side of the box which is next to me, for my own protection. The side next the patient is fitted with two heavy pieces of tin in the same way. You see in the center of the bottom of this box I have made several holes, simply for the purpose of ventilation, as the tube would otherwise make the box very hot. Through the center of these two pieces of tin I have a two-inch hole, which is the largest sized ray that passes from the inside of the box to the patient; it is seldom that we need a larger size than a two-inch funnel of light going toward the patient. I can regulate the size of the ray passing through this two-inch opening by a diaphragm, also made of thick tin, in which I have made holes varying in size from one and three quarter inches down to one quarter of an inch. By turning this diaphragm upon its center the desired size of opening can be brought over the two-inch hole, and thus the size of the ray regulated. Lastly, this aluminium slide fits into a groove in the sides of the box, and covers the opening through which the light passes toward the patient. This acts as a filter, and keeps from the patient all the rays which are supposed to burn. This piece of aluminium is grounded by a small wire running from it to the gas-pipe; the aluminium filters the light so that no electric discharge will reach the patient.

In this connection I desire to report two cases of superfluous hair and two cases of lupus, which I am treating by means of the X-ray and the device which I have just shown. This is a new treatment for the removal of superfluous hair, or hypertrichosis, as it is called. They are doing considerable work of this kind in the East, but, so far as I am aware, I am the first to adopt this line of treatment here. I have been treating two cases of superfluous hair by this method since the first of this month. I have looked over my history-book and jotted down a few points of interest.

CASE 1. Miss L. has had eighteen treatments, varying from five to ten minutes each; these eighteen treatments have covered a space of one hundred and twenty-nine minutes, or two hours and nine minutes altogether. The hairs on her chin, which was the point nearest the Crookes tube at the time of the exposure, where the rays were most effective, began to drop out after the eleventh exposure. Soon after that, all the balance of the hair on her face dropped out, leaving no scar; she suffered no pain, no irritation, and no dermatitis, as is frequently the case after a number of continuous exposures.

CASE 2. The second is very much like the first case. Miss R. has had fourteen treatments, varying from five to ten minutes each, making one hundred and twenty-nine minutes. The hairs became loose after the tenth treatment. The roots seemed perfectly dry, and the hairs could be easily removed with but little traction and no pain. In neither of these cases has there been any dermatitis.

I am treating at the same time two cases of lupus by this method. One has been under treatment two days, the other about ten days. In one case (lupus of the nose), which has been under treatment ten days, after the fifth sitting, each consisting of ten minutes, the sharp outline of the ulceration was flattening out. There is now a healthy line of skin all the way around the ulcer, and it is closing in toward the center; patches of skin are also appearing in the middle of the abrasion.

I am very much encouraged in the treatment of these cases—both the lupus and hypertrichosis—by means of the X-ray, especially since devising the box or protector shown you. If the treatments were stopped at this point in the cases of superfluous hair they would return, but by making ten to twenty additional exposures the hair follicles will be permanently destroyed and the hairs will not return. Close watch is kept upon the condition of the tube, keeping the vacuum as near one point as possible. This is determined by the fleuroscope.

The essay of the evening, "Report of a Case of Cancer of the Stomach," was read by William A Jenkins, M. D. [See p. 161.]

Discussion. Dr. W. F. Boggess: I had the pleasure of seeing this case ante-mortemly with Dr. Jenkins, and at that time he had made a very clear diagnosis from the subjective and objective symptoms without any clinical test of the stomach contents. The case at that time was so positively evident to me of cancer of the stomach that, without examination of the stomach contents, there was no question about the diagnosis.

The case post-mortemly offers some very interesting features. In the first place, cancer of the cardiac end of the stomach is comparatively rare when compared with the pyloric end. In the next place, the whole stomach wall seems to be infiltrated with cancerous tissue, with involvement of the surrounding organs, especially the kidneys and spleen, the amount of adhesions to the aorta and diaphragm, and the glandular involvement; and in addition to that, one of the most interesting features of the case is the fact that the liver shows neither adhesions nor cancerous involvement. In the great majority of cases cancers of the stomach, whether of the cardiac end or the greater or lesser curvature, or near the pyloric end, show involvement of the liver. Atrophy of the stomach is what we do not ordinarily find in cancer of this organ, in that in the majority of cases the disease attacks the pyloric end, and you have stenosis with dilatation of the stomach walls. This makes the case and specimen interesting from a clinical standpoint as well as from a pathologic view.

Cancer of the stomach is not an infrequent trouble; it may be either primary or secondary—a great majority of them being primary cancers involving principally the pyloric end—often very easy to diagnose, at other times the diagnosis being attended with a great difficulty. When the patient is so emaciated and the cancerous infiltration so marked as to allow you to palpate a hard tumor in the region of the stomach, or connecting directly with that organ, the diagnosis ordinarily is comparatively easy; but sometimes, even with the palpation of tumors in the ordinary regions that cancers are found, with the subjective and objective symptoms, we can not say positively that the patient has a cancer without the further clinical examination of the stomach contents, and in this we have one of the best diagnostic points. In the great majority of cases of cancer of the stomach we find an

absence of free hydrochloric acid and the presence of an excess of lactic acid; I say in the great majority of cases, because numbers of cases have been found where the post-mortem examinations have proven cancer of the stomach where hydrochloric acid was found present, even in excess, at some time during the course of the disease; but it is only a temporary presence of HCl, and sooner or later it will disappear entirely from the stomach contents. Not only is the absence of HCl of great diagnostic value—and the test is easily and simply made—but a test of equal value is the presence of lactic acid after a properly-given meal.

Boaz called our attention a number of years ago to the fact that the test-meal, as ordinarily given with baker's bread, was of little or no value, because the stomach contents under these circumstances will always show the presence of lactic acid after one or two hours; in other words, that there was a certain amount of predigested or pre-prepared lactic acid in the bread before being taken into the stomach. But if you will give a test-meal of substances where there can possibly be no lactic acid fermentation, and you find lactic acid in the stomach contents after the withdrawal of the test-meal, it is one of the best diagnostic points we have at our command at present. The presence of bacteria is of great value also. But if you have typical subjective and objective symptoms of cancer of the stomach, the test-meal should be given of proper substances and with ordinary precautions, and under these circumstances the absence of HCl and the presence of lactic acid are always absolutely confirmatory.

The cancers of the stomach that we see in our practice being almost always pyloric, in addition to examination of the stomach contents, hypertrophy or dilatation of the stomach coming on rather acutely in the course of a few months, with stenosis and stagnation of food, is another very suspicious point, and should lead us to suspect cancer even without marked objective and subjective symptoms.

It is rare that you find cancer involving the cardiac end involving all the stomach wall, giving rise to atrophy and contraction of the stomach rather than dilatation, and when you have this condition, owing to the fact that the colon is in front of it you do not have the same ability to detect a tumor by palpation that you have when the cancer occurs at the pyloric end.

The treatment as outlined by Dr. Jenkins is possibly about all that we know at present. There is, of course, no treatment for these cases

other than the hope of prolonging life for a few weeks or a few months. Surgical intervention at best can offer very minute hope of a few weeks', or a few months', increase in life, and perhaps no decrease of pain.

As far as diagnosis is concerned, the only thing we have to differentiate in cancer is hyperchlorhydria, which is ordinarily a disease of early life, and ulceration of the stomach, which is also a disease of early life. A careful test of the stomach contents will easily differentiate between cancer and ulcer; while you may have ulcer of the stomach with even a decrease or absence of HCl, yet, as a rule, this condition is not present, and we always have an excess beyond $\frac{24}{100}$ of one per cent of HCl. The pain in cancer of the stomach is not as acute as it is in ulcer, nor does it come on immediately after eating, as pain in ulcer of the stomach does, and the pain is more localized in ulcer than it is in cancer. The sensation in cancer is a general tenderness of the stomach; the pain of ulcer is acute, localized, and excruciating on pressure. So ordinarily, taking into consideration the age of the patient, the subjective and objective symptoms, careful analysis of the stomach contents and the presence of dilatation of the stomach, stenosis at the pyloric end, etc., you can in the great majority of cases arrive at a positive diagnosis without the palpation of a true thickening or tumor in the location of the stomach.

Dr. Jenkins is to be thanked for treating his case so assiduously as I know he did in this case, and watching it so attentively, and also for giving us the post-mortem results of one of the most interesting specimens of cancer of the stomach that I have ever seen, and I have seen a good many such cases in my asylum and hospital work.

Dr. John R. Wathen: This is a most interesting case, and it is a pity that we can not have more post-mortems made to confirm our diagnoses and in this way better understand the diseases which we are called upon to treat. Having a post-mortem specimen, with properly prepared microscopic sections, we are better able to appreciate the disease.

In regard to the etiology of cancer of the stomach, as in cancer elsewhere, the profession is still undecided. We have carcinoma of the epithelial tissues; as these are the most susceptible tissues of the body we would naturally expect them to be the first affected by degenerative changes. Whether the cause of cancer is irritation, whether it is an embryological growth due to some faulty cell action, whether due

to bacteria or some parasite or protozoon, as claimed by Gaylord and Park, is still unsettled. The consensus of opinion among most pathologists is along the line of irritation; whether it be due to a germ, chemical or mechanical, it matters not. We know cancer appears in those organs which are most prone to irritation, which are most delicate in structure, those most used in everyday life, as the stomach, and also, of course, the epithelial tissues, being the most delicate, are most often affected. We further know, in support of the theory of the protozoic origin of cancer, that it is very common in certain sections of the country. In what is known as the cancer belt, extending from Rochester to Buffalo, New York, we find a large number of cancer cases. Why cancer is more prevalent in this part of the country, which is in other respects healthful, we are unable to decide.

The protozoon (so-called) of cancer resembles the yeast microbe and a number of others of that type of organisms. We also know that in the part of the country mentioned the best hops which we use in brewing are grown, and the rest of the country is largely supplied from that section. Whether this has any connection with the cause of cancer or not is a question.

As brought out by one of the gentlemen in discussing the paper, the question of differential diagnosis between ulcer of the stomach and cancer is still doubtful. We know that all cancers tend toward ulceration in the end. And what this ulceration in cancer is produced by we are still unable to decide; probably a sclerosis takes place with breaking down of the tissue—it may be caused by toxines, or secondary infection by pus-producing organisms—but the exact cause is still a question. But we know that ulceration occurs in the later stages of cancer, therefore the differential diagnosis between cancer with ulceration and primary ulcer of the stomach would be difficult in the later stages of the disease.

As regards surgical treatment of cancer of the stomach, the best men are still undecided. In well-selected cases, where there are few complications, with the patient otherwise in good condition, some favorable results have been obtained; but as most cases of cancer of the stomach are diagnosticated late in the disease, surgery offers very little in the way of treatment to-day.

Dr. M. F. Coomes: The subject of cancer of the stomach is interesting to all of us, and the older we grow the more interesting it becomes. In looking over some statistics upon this subject in a recent

work I noted it is claimed that as much as fifteen per cent of all cases of cancer are supposed to be hereditary. If we accept the germ theory of Gaylord as being true, then the question arises whether cancer is carried through the body of the parent and can really be transmitted in this way to the offspring.

The surgical aspect of cancer is exceedingly interesting, and one thing has been demonstrated by this post-mortem specimen, viz., that this man lived a long time without any stomach, so far as the physiological action of that organ is concerned, which is very interesting. Dr. Head removed the stomach of a woman some two years since for cancer, and the patient was still living a few weeks ago. She has lived nearly two years with complete absence of the stomach, and it is claimed she has had very little trouble on this account, and has gained about thirty pounds in weight within the last seven months. At present, while surgery offers no great encouragement, if I had a cancer of the stomach and knew I had it, I think I should be willing to undergo an operation, hoping to gain at least a little greater lease on life thereby.

Two things mentioned by Einhorn in the treatment of cancer are worthy of consideration; one is an old remedy in which many authorities do not place any reliance, *i. e.*, condurango. Yet this man, who has had a large experience, states that he has seen some wonderful results from the use of condurango. He attributes the good effects principally to the tonic properties of the drug. He further says that methyl blue seems to have had beneficial effects in the treatment of cancer.

Dr. J. W. Irwin: Cancer of the stomach is not a new disease. The theories touching the question of causation have been numerous. Possibly some light has been thrown upon the cause by Park and others; of this, however, we are not certain. They have taken some steps in advance, and have given us some information. The Russians for a time ascribed cancer of the stomach to the inordinate use of tomatoes as a food. This, however, was disproven, because there were cancers of the stomach before tomatoes were ever made use of as an article of food. Positively and negatively this matter has been discussed for many years; what the outcome of the new theory may be we do not yet know.

So far as cancer of the stomach is concerned, we meet with it in various forms; we see cancer of the stomach without a tumor, and we see it with a tumor. I refer to carcinoma. It is very hard to diagnos-

ticate or differentiate cancer of the stomach from other affections when we have no tumor. It is equally hard to diagnosticate cancer of the stomach occurring at the esophageal entrance, in view of the fact that the part is away beyond palpation and beyond percussion; it is underneath the arch of the chest.

The case reported by Dr. Jenkins appeared at our clinic in the Kentucky School of Medicine. Dr. Jenkins informed me of the most important symptom in the case, which was the trickling of water that could be heard about opposite the fifth rib posteriorly as it entered the stomach, and the length of time it took to enter the stomach. It is said that if an ordinary swallow of water requires longer time than one fourth of a minute to empty into the stomach that there is considerable thickening or narrowing of the esophageal end. And if it takes a minute to enter the stomach, with other symptoms present, it is supposed to be strong presumptive evidence that we have to deal with cancer at that orifice. I ignored the statement of Dr. Jenkins, not, however, without giving it its full value; I did not want to make use of it at the time. I wanted to show what we could acquire, what we could obtain in the way of information, without this symptom, and by palpation and percussion I showed that we had a thickening of the coats of the stomach near the pylorus, extending upward. The result of the post-mortem shows that the pylorus was least affected, but the coats of the stomach were all thickened and contracted.

It was easy to diagnosticate cancer of the stomach when I saw the case, in view of the fact that the man had evidence of cachexia; there was increasing emaciation, and all the signs which go to show that some wasting disease had taken hold of the body. When it comes to the differentiation between cancer of the stomach—in any part of the stomach—and peptic ulcer and fibroid thickening as a result of chronic gastritis, then we have to consider the case carefully. We know that peptic ulcer usually affects females, and occurs before the age of twenty-five years. Cancerous affections affect older people rarely before the age of thirty-five or fifty-five.

We have the history of anemia in young females, excessive loss of blood during the menstrual periods; we have a tendency to chlorosis, or we may have chlorosis. We may have the history of some great mental worry, some bereavement, some broken engagement, or something that mentally depresses the young female, hence in such persons we have the greatest number of peptic ulcers. We have gastritis to

deal with also, and to differentiate between cancer of the stomach and gastritis is certainly not very difficult, though cancer may occur in the course of gastritis. The history of the case will usually show the cause of gastritis; it may be the result of profound anemia, in either the male or female. It occurs early in life, before the age of forty years. But in gastritis we are confronted with another trouble; we have hypertrophy of the mucous lining of the stomach; we have also hypertrophy of the muscular coats of the stomach. In some instances of chronic gastritis due to the use of a superabundance of alcohol there have been recorded cases where the muscular coats have been found one half to three quarters of an inch in thickness, in patches here and there.

To differentiate between the enlarged and thickened coats of the stomach and actual cancerous enlargement is a difficult matter so far as palpation and percussion are concerned, but here again we are aided by the history of the case. In gastritis we have the history of a capricious or a ravenous appetite, while in cancer there is a declining appetite. In cancer we have a dilated stomach filled with excessive acid, as a rule acetic; we have a decline instead of an increase in bodily weight; we also have cachexia, because cachexia comes on early when cancer involves hollow organs, as a rule. Therefore, in these cases, without resorting to a test-meal, or whether we have free hydrochloric acid or whether we have lactic acid, it matters not; we can make the diagnosis without this information about as well as we can with it, in view of the fact that their presence or absence does not speak for or against cancer by themselves. While the presence of free HCl does not preclude the possibility of cancer, its repeated absence is a sign, and one of the best signs we have, that there must be some cancerous condition of the stomach. This sign is particularly useful in that form of cancer of the stomach where we can not discover a tumor; but if we have a rough nodulated tumor, the absence of free hydrochloric acid and an excess of lactic acid, we have all the symptoms present even before we see any cachexia.

We have another condition to deal with, viz: fibroid thickening at the pylorus. There are a number of cases of fibroid thickening which at first are not cancerous, but it is said later on, after a year or two, they become cancerous. I have no doubt that this may be true.

I saw a case about four years ago that consulted me from a small town in the interior of this State, where I made a diagnosis of fibroid

thickening of the pylorus. I was able to make the diagnosis owing to the length of time the trouble had been in existence, the habits, history, etc. I informed the patient of the nature of her trouble, and gave her a mild laxative and alterative, advising that she live on fish, milk, and a vegetable diet, and liquid food, and for a while she gradually improved. She then returned to a mixed diet, consisting of meat and vegetables, and for one and a half years she remained strong and well.

She came to consult me a second time, and I found the stomach dilated owing to the presence of gas, usually acetic acid fermentation. I still found the pylorus thickened, but this time roughened and somewhat nodulated. She lived twenty-one months after her second visit to me, and with the symptoms of cancer involving the pylorus. She had all the symptoms of cancer, a tumor, cachexia, increasing emaciation, obstruction of the pylorus, with occasional vomiting of blood and mucus.

The diagnosis between fibroid thickening of the pylorus and cancer is not difficult, because in the former, unless the pylorus is very much obstructed, there is not much emaciation, while in cancer there is emaciation long before the presence of a tumor or any enlargement of the coats of the stomach is observed.

As to treatment, we have no curative treatment that we know. I have been using lately a one-per-cent solution of a new drug supposed to be very efficacious; it acts as a positive heart stimulant when given in one to five drops three times daily, well diluted with water, viz: the chloride of platinum. I have found, after the administration of this drug now for a period of about three months, that benefit has been obtained. In one case there has been an increase in weight of body, in the other case the weight is at a standstill; but there is almost freedom from pain, and there is evidence that the tumor is not as large as it was when I first began the administration of the remedy. What the outcome will be I do not know.

Touching the question of condurango in the treatment of cancer of the stomach, I have prescribed this remedy for disorders of the stomach ever since it was first brought prominently to the notice of the profession. Like many other drugs, it is a good stomachic; it has a soothing effect in disorders of the stomach, and I am not sure that it has not some curative effect in chronic gastritis. I have never given it alone, but always in combination with hydrochloric acid, and perhaps more benefit has been derived from HCl than from condurango; I would not say positively that it has not some curative effect.

Dr. J. W. Galvin: I would like to ask the essayist in regard to the condition of the bowels and the bile pigment. As the liver was not involved, although I did not understand what he said in this particular, it is to be presumed there was no jaundice present.

Dr. Geo. B. Jenkins: The most interesting feature about the case to me is the fact that the left kidney, the spleen, the abdominal aorta, the transverse colon, and the mesentery are drawn over and incorporated in the mass. I would advance the opinion that it was a diffuse scirrhus cancer, based upon the fact that it occurred in the cardiac end of the stomach, that there is no ulceration present in the mucous membrane of the stomach, no secondary deposits in the glands of the mesentery nor vomiting of the so-called cancerous tissue which is so frequently found, although there was more or less vomiting present in this case. The size of the stomach, also the thickness of its walls, would bear me out in this statement; the entire walls of the stomach are very much thickened except at the pyloric end.

In those cases in which you have cancer and the presence of hydrochloric acid, I would say that it was present only in those conditions in which cancer was engrafted upon peptic ulcer. When you have HCl present in cancer of the stomach, it is in those cases in which the cancerous growth comes from irritation or some other condition attended by ulceration primarily.

Dr. Wm. A. Jenkins: I appreciate everything that has been said in the discussion, and beg to thank the members most heartily for it. I was glad to be enabled to observe such a case, for it taught me a great deal, especially the post-mortem examination and the observation of so great an amount of lymphatic involvement. It has been shown that metastatic involvement from cancer may occur in any organ of the body or in any tissue, making the chance for recurrence after operative procedures very great indeed.

In reply to the question asked about jaundice: This patient was a full-blooded negro, and the only way I could have detected any jaundice would have been to observe the conjunctivæ, make a thorough examination of the feces and urine, etc. No jaundice was noted.

We are to bear in mind always when we consider the presence or absence of hydrochloric acid, that it is only confirmatory, and should be taken in connection with the other group of symptoms.

In a recent issue of *American Medicine* you will find a long series of cases reported in which cancer was engrafted upon old peptic ulcer bases.

The presence or absence of hydrochloric acid is a strong point in the diagnosis, when considered with other symptoms. The diagnostic features are coffee-ground vomiting, presence of tumor, history of the case, cachexia, progressive emaciation in connection with the age of the patient, fifty years or over.

In so far as drugs are concerned in the treatment of this disorder, I do not believe the leading practitioners of this or other countries place any confidence in any drug for the treatment of cancer of the stomach. Condurango was used in Germany and other foreign countries very largely at one time, but it has been practically discarded.

Operative procedures have been known to do some good if the growth is small and you see the case sufficiently early. If, upon laying the parts open, it is found there are practically no metastases, the surgeon may in some cases do a great deal of good. But, as I said in the paper, in nearly every case it will be found that peritoneal and lymphatic involvement has taken place to such an extent that it will be only a question of weeks, or at most months, until the final end.

Epilepsy Following Appendicitis — Continued Report. Dr. J. W. Irwin: At one of our recent meetings I referred to a case, the wife of a medical man, that came under my care. She was in the incipient stages of epilepsy at the time. I believed it was due to some disorder of the ovary, that there was incarceration of the ovary in the cicatrix following an operation for appendicitis.

I turned the case over to the abdominal surgeon and advised extrication of the ovary or its removal if it could not be extricated, especially if the ovary was found diseased, or if the tube was diseased. Since then Dr. W. H. Wathen has done an operation upon the patient, which he will describe for himself. I think she was operated upon four weeks ago. Up to the time of the operation this patient had been having from one to four convulsions a day. She had petit mal, even worse, but she did not have quite grand mal. Since the operation every sign of nervousness has disappeared, and there has been no return of the convulsions. Dr. Wathen did the operation, I understand removing the ovary and tube. He will tell you what he has done. I saw the patient to-day for the first time since before the operation. She is sitting up, and her skin has become clear. Previous to the operation she was suffering from acne, probably brought about by the use of bromide of potassium given for the epileptic seizures. She feels better than she has for a year.

Discussion. Dr. W. H. Wathen : The case reported by Dr. Irwin was not seen by me until the day before the operation, when she was admitted to her room at the St. Joseph Infirmary. There was tenderness and some apparent enlargement upon the right side, in the region of the ovary and tube, with the patient in quite a nervous state. She was put upon the operating table, and under the influence of an anesthetic a more thorough examination was made per vaginam and by the bimanual method, with the same results as in the previous examination. A vaginal incision was made into Douglas' pouch and the ovary separated from adhesions upon or near the wall of the right side, and the ovary and tube, the ovary being decidedly enlarged, brought into the vagina and removed. The ovary could possibly have been treated by the opening of some of the numerous cysts in its substance, or by partial section of the ovary, but this was not deemed best in view of the patient's nervous state, and the tube and ovary were both removed. During the day following the operation she showed about the average nervousness that follows such operations and the administration of anesthesia, but upon the second day she had no nervous trouble, in fact, none since the effect of the anesthetic has disappeared ; and the nurse, who has been working with me seven years, told me the other day that she was one of the most obedient and easily managed patients she ever saw, and freer from any nervous trouble. I discovered at no time after the second day any symptoms of nervousness ; she left the infirmary in that condition a few days ago, and I have not seen her since, but I am sure she will make an absolute recovery from the threatened epileptic condition.

The operation was performed four weeks ago.

Infection Following Miscarriage. Dr. W. H. Wathen : Three months ago a lady was referred to me by a physician in Lebanon, Kentucky, with the history detailed in his letter that she had a miscarriage nine months previously, in the early part of pregnancy ; that following this miscarriage she had fever and was confined to her bed for several weeks, with distension of the abdomen, etc. ; she then changed doctors and continued to have fever, acceleration of pulse, and tenderness in the pelvis ; finally pus began passing through the bladder with the urine, then blood ; she then had frequent urination, so frequent that she could not sleep over fifteen to twenty minutes during the night at a time, and had become almost exhausted from the loss of sleep associated with the other drain upon the system. The doctor wrote me a letter saying that

she had pylonephrosis that had practically destroyed the right kidney, and had extensively involved the left kidney.

Upon examination I found the pelvis filled with a mass which immovably bound down the uterus and other pelvic structures. I found the bladder inflamed, particularly in the region of the urethro-vesical junction. By dilatation with a vesical speculum and with the finger the irritation and desire to urinate was relieved, and she slept during the entire night, not voiding her urine after retiring. She was so feeble that it was impossible to operate upon her further, so she was kept quiet for three weeks, until she had regained sufficient strength to permit of the operation being performed. Under the influence of an anesthetic it was plainly discovered that all the pus was coming from the bladder, and that the kidneys were not involved.

An opening was made into Douglas' pouch and a great quantity of offensive pus was drained away. She made an uninterrupted recovery from the operation and returned home, having gained probably twenty pounds in weight. The opening into the bladder healed, the urine is perfectly normal in every way, but there is still a decided discharge of pus coming from the vaginal incision, and in an examination this morning (she having returned to the city yesterday) I found an opening as large as my little finger, and when I press down upon the right side I can force out pus. There was some enlargement upon the left side.

This patient has been relieved of the danger of death from a condition with which she has so long suffered, and had there been but a single cavity within the pelvis containing pus she would have been entirely cured of the trouble, because the cavity would have been gradually filled by granulation. Evidently there are sinuses in the pelvis, probably connected with one or both tubes, one having formerly entered into the bladder, which will necessitate further operative procedures, and I think will require total hysterectomy, for the reason that this woman will not get well unless we can properly drain every sinus, and we can not drain well in this case without removal of the uterus unless we go above and enucleate all these structures, which would be a very difficult operation and dangerous in her present condition, and the ovaries and tubes being destroyed the uterus is of no further value and had best be taken out. It also being her desire that it be removed, I consider it the operation of election. So I expect in a few days to remove the uterus, and anticipate a complete recovery of the patient following this operation.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, January 28, 1902. The President, William H. Wathen, M. D.,
in the Chair.

Double Placenta — Continued report. Dr. Carl Weidner: I will simply make a further report upon the case of twin placenta shown at the last meeting of this society. Upon inquiry it has been shown that the twins are of different sex, with entirely different external appearance, etc., one being male, the other female; one having long hair when born, the other short hair. Both are living at the present time.

I was astonished to hear this report after the conception I had formed about the case from the discussion before the last meeting. We had the typical appearance of a single, smooth, undivided placenta (we recognize that we may have a coalescing of the membranes), and I looked in this case for typical twins, with similar external appearances and characteristics, same sex, etc. Of course there were two umbilical cords and two amniotic sacs.

Discussion. Dr. T. P. Satterwhite: Unquestionably in this case there were two placenta and they had coalesced. An interesting point to determine would be whether both children were contained in one sac. When there is one placenta and both children are contained in one sac, then they will always be of the same sex, either males or females.

Dr. W. H. Wathen: In this case there were probably two separate ova, and the union of the two placenta was only by adhesion; this occurs frequently. But so far as the amniotic sac is concerned, even had the twins come from one ovum there would have been, unless something had destroyed the intervening partition, two amniotic sacs, because they arise from each embryo. In the case of twins from one ovum, always necessary in monstrosities, there is a very intimate relation. In that instance we have possibly but a single amnion, but in the case of separate twins the amnion would be separated.

Dr. G. B. Young: In regard to the question of one ovum producing two children: As I understand the matter, this presupposes the presence in the ovum of two nuclei. I believe it is true that the microscope has demonstrated the presence of two nuclei in one ovum; that ova have been found in the ovary which apparently contained two

*Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

focal points, and that this is the origin of real twins. In that connection it occurs to me that it is not an uncommon occurrence that we have seen hen's eggs with two yolks, and I would like to ask whether any of the members have seen or heard anything about the development of one of these eggs—have chickens been observed hatched from these eggs where the young were joined together in any way? In other words, is there a case on record where two fowls have been hatched from the same egg?

Dr. John R. Wathen: I have been especially interested along this line. In some biological work which I have been doing I have fertilized ova of the lower biological animals, and have taken the stand that one cell can divide into four centrosomes in the place of two centrosomes. I have written to various authorities upon the subject and they have all denied such a possibility, but I have microphotographs showing that what I have said is true, and just now I am having some cuts made to go in a text-book which I am writing upon the subject showing these four centrosomes, which amply demonstrates the fact, although it is denied by almost every one.

Railroad Accident. Dr. Geo. W. Griffiths: Five weeks ago a railroad man was caught under a car, just exactly how I can not tell; we can not always get the correct history of such cases. When we examined the man we found a fracture of the ulna and radius, and a fracture of the humerus near the shoulder-joint. I dressed the forearm and the humerus by means of narrow splints and put on adhesive plaster, with the usual wedge-shaped pad under the axilla. I saw that I could get no union, and told the man I would probably have to give him a swinging or a false joint, and I could easily remove it afterward if it was not useful to him. The arm went along very nicely, I thought, for some weeks; then gangrene set in. Spots were noticed over the forearm, and the arm wasted away up near the shoulder to the size of a child's ten years old, until I found, of course, that any further attempt to save it would be useless. Five or six weeks after the accident I amputated the arm near the shoulder joint. In all these cases, if I can possibly do so, I always leave a sufficient stump with head of bone, so as not to disfigure the man very much, leaving the shape of the shoulder to hang the coat on, etc. My friend, Dr. Ewing Marshall, was with me when I first saw the case, and then assisted in the amputation. I found a very peculiar state of affairs.

The humerus was fractured near the head of the bone and there made a false joint; we found the humerus fractured near the elbow; the lower fragment (like an old-fashioned clothes-pin) was driven up fully one and a half inches into the upper fragment, so that it could not be pulled out. In operating, I thought if bony union was found I would still try to leave this portion of the bone, but this was found impossible and the arm was amputated as stated. The bone was wedged into the upper fragment as tight as if it had been driven in with a hammer. I have never before seen such a case, in the hundreds of fractures that I have treated.

In fractures of the humerus, especially near the shoulder-joint, it is sometimes extremely difficult to get union; it is one of the hardest bones in the body to get union. I tried the plaster-of-Paris and everything else, but this was the state of affairs found after faithful treatment. The upper fragment was split and the lower fragment was wedged into the upper fragment so tightly that no forceps or anything else could pull it out.

Dr. T. P. Satterwhite: It is a little remarkable that the distal end of the bone should have been driven up between two portions of the proximal end without breaking the bone. I do not believe we could call this an impaction, but if the doctor had measured the arm he would have thought there was an impacted fracture, and had he discovered this he would probably have allowed the impaction to remain. Evidently there was injury of important nerve or blood supply which caused the gangrene.

Dr. Ewing Marshall: There are two or three points of interest about the case that Dr. Griffiths overlooked, which at least interested me as much as those he related. In the first place the humerus was fractured also below, possibly at the junction of the middle with the lower third, which would imply that this piece of bone between the two fractures was in some marvelous way driven into the upper fragment. I was holding the shoulder for Dr. Griffiths in the amputation, and when what was supposed to be the humerus had been sawn through he still kept sawing bone. In all, three pieces of bone were sawn through in doing the amputation; the split ends of the upper fragment of the humerus and the piece of bone that had been driven in from below. I believe Dr. Bizot, who was present, preserved the specimen, as it was a curiosity and something that none of us had ever seen before.

The essay of the evening on "Cholelithiasis" was read by Carl Weidner, M. D. [See p. 166.]

Discussion. Dr. Geo. W. Griffiths: I remember having been called to see a woman twenty-five years ago who had what was thought to be a cancerous tumor in the right side. I cut down upon the tumor to determine its nature, and if possible remove it, and as soon as I cut through the tissues covering it a gall stone as large as a hen's egg rolled out. It was one of the largest gall stones that I had ever seen.

Dr. Ewing Marshall: In regard to the question of using morphine in these cases, I believe Dr. Weidner said that even large doses of morphine sometimes had to be administered in order to keep the patient comfortable. If the physician is almost constantly in attendance this may be permissible, but some care ought to be exercised in repeating the dose of morphine, because after relief of pain takes place the patient may be overwhelmed. There is danger in giving morphine in these cases unless the patient is carefully watched and the effect of the morphine already given is carefully noted.

Dr. Peyton (of Jeffersonville, Ind.): First it occurs to me that none of us are warranted or justified in saying to the patient beyond doubt, even in spite of the presence of colicky pains—periodical attacks—that they have gall stones in the gall-bladder or elsewhere. It may be true, as has been shown by the paper, that the last gall stones have passed. So, speaking to the paper purely from a clinical or surgical standpoint, I would say that in proposing operation to the patient that you are not justified in saying that we are most certainly going to find gall stones present. The last one may have passed, but whether that is true or not we are certainly warranted in advising an operative procedure, even though we find nothing but a severe catarrhal condition, which is as a rule relieved by the free drainage that we get after or as a result of the operation.

In reference to the use of morphine hypodermatically, it occurs to me that we might possibly be safer, if the attack is not too long, in the administration, to the degree of anesthesia, of chloroform. I have used it in one or two instances, and have been much pleased with the result. I have in mind a case, in fact, the last one that I operated upon. The patient was a woman, fifty-five years of age. She had suffered from periodical attacks that had been thought to be attacks of indigestion or acute colic of some kind, and when I opened the gall-bladder I found,

after considerable difficulty, the presence of very minute stones. I found a number of them, but they were inclined to adhere, and by the adhesion of quite a number of these small stones formed a stone of rather large size, but the slightest pressure would break them apart. This patient was drained in the usual way and did nicely, but after allowing her to go home I find that the drainage has not ceased, the opening has not closed. My judgment is, in this particular case, that there was considerable thickening—almost complete closure—of the cystic duct. I am firmly convinced that the common duct is all right, from the condition of the patient. There is no jaundice and the condition of the stools indicates the presence of bile, but there is still the passage of mucus from the opening in the gall-bladder, and this has continued since the operation. My judgment is there has been a closing of the cystic duct, and if I not able to relieve the condition in any other way I intend to remove the gall-bladder entirely.

Dr. J. W. Irwin: I am sorry I did not hear all the paper, and am also sorry the discussion has not taken a wider range. This is a very interesting subject, especially to the general practitioner, even more so, I think, than to the surgeon, who deals exclusively with the use of his knife, for there are many cases of gall stones that come under the observation of the general practitioner that will not permit of an operation. If we could differentiate between large and small stones it would help us very materially in the treatment of gall stones.

I do not believe that all cases of gall stones require surgical intervention. I have had in the course of my practice a number of cases of gall stones which have been relieved by medicinal treatment. I say relieved, because we are never sure that the patient will not have gall stones again, and even after gall stones are removed by the surgeon's knife they may form again. Therefore, after all, the surgeon's knife is the most radical way of getting rid of the distress, and also draining the bile passages of morbid material that should be carried away.

As to the cause of gall stones: This is an important matter, owing to the fact that so many cases occur in females more than in males. Five females to one male have gall stones. Another remarkable fact is that drunkards rarely have gall stones. Etherized alcohol is a solvent of gall stones, and when a gall stone is in the incipient state—forming—alcohol appears to keep it in solution. This is in favor of moderate drinking. Women, on the other hand, who do not drink like men do, omit one thing that favors the formation of gall stones. Again,

pregnancy conduces to gall stones, as do also abdominal tumors, corsets, the sedentary habits of women, and the trashy food that many of them live upon conduces to gall stones. It has been shown that if bile is kept for six weeks without agitating or shaking it, that its reaction changes to acid and a deposit will form; cholesterin will be thrown down. If the diaphragm can not be moved freely up and down, as it can not be when there is a large abdominal tumor or pregnancy, or when stays compress the waist, it is easy to suppose that stasis of the bile might occur, and that it might form the starting-point of gall stones.

The first symptom of gall-stone colic is usually pain at the pit of the stomach, which in some instances extends around the waist; it may run up to the right shoulder, oftentimes down into the right iliac fossa, sometimes in the back, and sometimes it is most severe just beneath the heart. It may form a girdle or sense of constriction around the waist; cold perspiration breaks out over the patient, owing to the intense pain; a waxy pallor comes on, which is followed by reaction in a few hours, fever running up to $103-4$ or 105° F., depending largely upon the idiosyncrasy of the patient. We may find the temperature to reach 105° F. in a bad attack of gall-stone colic. Every evidence of approaching death is present. There is often a deep-down boring pain in the epigastrium, a little to the right. If, in addition, we find jaundice coming on within a few hours from the beginning of the attack, we can say that it is due to occlusion of the bile ducts. If we find an enlarged gall-bladder, there must be something to cause it, and we may infer that the ducts are occluded, and if it be the first, second, or third attack, it is most likely to be caused by a stone. We may have distension of the gall-bladder with mucus, perhaps some muco-pus, not bile, because the bladder is not often distended by bile, it being only the receptacle for the overflow of bile; when it can not get out of the common duct it dams up and fills the bladder.

As to the medical treatment of this disorder, I have found on many occasions great relief to follow the hypodermatic use of morphine. I do not know anything better to give the patient for the relief of pain. In some cases where morphine did not seem to be satisfactory I have given a drachm of chloroform by the mouth, and have repeated this dose every three hours until sufficient relief was obtained. I have found that opening the bowels thoroughly by giving five grains each of calomel and rhubarb, and this followed in five

hours by the administration of a saline, has had a salutary effect upon the inflammatory condition. I have found between attacks it is well to keep the bowels freely open, and a good remedy for this is phosphate of soda. I have used succinate of soda, and it seemed to have good effect, not in dissolving the gall stones, but probably in preventing the formation of others. After administering it for a month the attacks of gall-stone colic that followed it were not so severe as those which occurred previously. I am led to administer this drug perhaps oftener than any other between attacks, but have not been so fortunate as Tyson, who claims that he has never seen an attack after its administration. I have seen repeated attacks after using this remedy. I have also administered large doses of olive oil, the old domestic remedy, not because I thought it was a specific, but because I often found it useful. In many cases I have seen quantities of gall stones pass, and have shown before this society two large ones following its administration. I am satisfied that the administration of olive oil has been followed by good results in many instances. I have also used Carlsbad water, have sent patients to Carlsbad Springs, and have treated them at home. I have sent them to the various springs about the country, have sent them to high altitudes and to low ones, and attacks have occurred just the same as if they had remained at home. Many of these cases can not be relieved by any medication, hence the surgeon's knife must be called into requisition. But I want to say that not every case of gall stones requires the use of the surgeon's knife. I believe that therapeutic measures will relieve four fifths of the cases.

Dr. Geo. W. Griffiths: I think it is always advisable, where gall stones are suspected, to strain the excreta through mosquito netting and search for stones in this way.

There is great danger of the patient becoming addicted to morphine when this drug is used under any circumstances; therefore, I would use chloroform and warm baths in preference.

Dr. W. H. Wathen: The paper very ably presented the subject as we understand it. The treatment of gall stones is certainly never medical, it is surgical or nothing. The treatment, however, of cholangitis or cholecystitis associated with gall stones may be at times medical, and these cases may be greatly relieved by administration of the various remedies suggested, and the patient may suffer much less after the use of these remedies. Those that cause pain, and where inflammation has developed, may be temporarily relieved and some permanently relieved of the inflammation by the use of medicine, but gall

stones are never dissolved and gall stones are never taken out of the gall-bladder by any form of medication. The only way that any kind of purgation can remove gall stones would be where they are located in the duct, practically in the walls of the bowel, and the medicine causing an intense peristalsis the gall stones are forced out.

Surgical treatment should only be applied where in the first place the stones are in the gall-bladder and inflammation and possibly supuration has resulted, or there is obstruction to the cystic, hepatic, or the common duct. Gall-stone surgery, however, that has done the most good and that is the most scientific, is where we operate for the removal of stones from the common or hepatic duct, where we open the abdomen, incise the duct, remove the stone, and if possible suture the duct and restore our patient to a perfectly healthy condition. There are some cases where we can not suture the duct, for the reason that adhesions have formed binding the structures down so deep and so obscuring the duct that it can not be sutured. Then, fortunately, we can often drain, and the patient will get well by this drainage deep down to the opening in the duct, or we may keep the wound open by gauze packed carefully and closely around, above, and below. Many of these patients make complete recoveries, and finally the opening into the wall closes. If we know, however, the best technique of manipulating, we can often suture the duct down in its immediate proximity to the duodenum. In some cases we can use the little hammer devised by Keen, introducing it into the duct and thus bring it up to be sutured.

Dr. Peyton: I want to state that you may not only have a stone imbedded in the duct, but you may have it formed beneath the mucous membrane surface covering the duct, which may offer a suggestion to account for the theory mentioned in the paper as to the cause of the formation of gall stones, that they may not only be impacted in the duct, but they may be imbedded beneath the mucous membrane.

Dr. Carl Weidner: I beg to thank the gentlemen for their discussion of the paper. I think before a gall stone can get beneath the mucous membrane it must ulcerate through.

From the standpoint of the general practitioner, as well as the surgeon, we have the right to consider a subject of this kind. I tried to bring before you in the paper the modern views as to the cause of gall stones, otherwise have told you nothing new. I will repeat, in spite of opposite opinions, that the majority of cases of gall stones belong to the domain of surgery. I am sorry that we have had to give

up these fields, but appendicitis and gall stones have slipped out of our hands into those of the surgeon.

The diagnosis in many cases is most difficult, particularly where we do not have jaundice, where we have pain which is not very characteristic, and where we see no stones pass. These cases sometimes resemble, more than any thing else, cases of simple gastralgia. No doubt many of us have seen cases of gall-stone colic of the character I have described, cases with stones in the bladder, with a stone occluding the neck of the bladder, possibly the cystic duct, where the gall bladder is not filled with bile, but with mucus or serum, where we get periodical attacks of pain due to nothing but temporary exacerbations of the inflammatory condition of the gall-bladder. These cases are hard to diagnosticate, because we rarely have jaundice and because we see no stones passing by the bowel.

As far as treatment is concerned, I passed over this hurriedly. I neglected even to mention chloroform. Certainly this is an excellent remedy, and I have given it in the treatment of gall stones frequently. So far as I know we have no solvent of gall stones within the body. When I was a student one of my teachers spoke highly of succinate of soda and stated that it seemed to have a solvent effect. I do not believe it acts any more as a solvent than other alkalies. Various remedies may be administered with the view of preventing the formation of stones. Most prominent ones are the alkaline salts; they liquefy mucus, act as laxatives, clearing out the bowel, stimulating peristalsis, and stimulating muscular contraction of the gall bladder and ducts, which is of undoubted benefit in cases due to catarrhal inflammation of the duodenum. Gall stones that cause pain indicate an operation. In obstructive disease where a stone has been pushed down into the ducts operation is positively indicated, and it is a matter of necessity if we want to prevent the worse after-effects, general inflammation of the biliary system, cholemia, pyemia, and septic conditions to which most of our patients succumb.

Various authors have laid down certain lines and indications for surgical treatment. In cases where there is a stone in the duct, in a patient where there seems to be little hope on account of the advanced stage of the disease, it has been proposed not to subject the patient to the severe operation of opening the duct, but simply to open the gall-bladder and drain it, and at a later period, when the patient has sufficiently improved, to open the duct.

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THE OSTEOPATHS GET IT IN THE SOLAR PLEXUS IN NEW YORK AND KENTUCKY.

The osteopaths made a desperate effort to secure the passage of a bill through the Kentucky Legislature to grant them all of the rights and privileges that the regular physicians are entitled to except to practice major surgery. They employed the best legal talent in the State to plead their cause before the committee to whom the bill had been referred. Suffice it to say that the committee very promptly put it to sleep, and it is to be hoped that it will sleep the sleep that knows no waking, and that all bills of a similar nature will meet the same fate if such should be presented to any legislative body for consideration.

The passage of such a bill as was presented to the Kentucky Legislature in any State would make it a haven for quacks, as it would enable the osteopaths to register anybody who would pay their examining board enough money. In short, it would be a get-rich machine the like of which has not been heard of in modern times.

The New York Legislature was asked to pass a bill with absurdities in it similar to those in the Kentucky bill, but the committee recognized the "ass's ears" in time to send him to grass for an indefinite period.

SHALL HEALTH BOARDS SELL ANTITOXIN IN COMPETITION WITH THE REGULAR DRUG TRADE?

There is no more interesting question now before the medical profession than that of obtaining pure antitoxin and pure vaccine virus. The recent action of the New York County Medico-Pharmaceutical League in connection with this subject brought to light some things that ought to be sufficient at least to make it apparent that there should be some safeguard thrown around all institutions that manufacture serums, to insure that nothing but trustworthy goods should be placed on the market. We are very positive that serums which are manufactured under the direction of health boards should not come in competition with those manufacturers who make a business of it for the purpose of money-making, for we believe that one of the greatest safeguards in this matter is good, honest competition. No individual or firm that has a large amount of capital invested can afford to send out from his laboratories an inferior article of this kind, as he would ruin his business and of course lose his investment.

Professor Reynold Wilcox, in speaking of the testimony given before the Legislative Committee at Albany two years ago, said that one of the Health Commissioners of New York City admitted that inferior antitoxin, such as was not good enough for use in New York, was sold at reduced rates in Chicago. It was also ascertained during this investigation that the stable in which the horses were kept was the basement of a veterinary hospital. To say the least of it, the New York Health Commissioners who were controlling the output of the antitoxin at the time did not find it necessary to borrow any nerve, as theirs seems to be the kind with the brand burnt in. Such evidence as the above is sufficient to satisfy the most exacting that health boards should not manufacture serum for sale, and that the public health demands thorough protection against the manufacture of impure serums and vaccine virus.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

LATENT MALARIA.*

BY GEORGE B. YOUNG, M. D.

Passed Assistant Surgeon, United States Marine Hospital Service.

The great advances made during recent years in our knowledge of the clinical hematology of the malarial fevers have cleared away many of the obscurities that had hitherto surrounded the subject of the atypical and obscurer phases of the manifestations of malarial infection, but there are, among others, one aspect of the question of which we have, as yet, but very imperfect knowledge. I allude to the question of latency. It therefore occurred to me that a very brief resume of the questions presented in that connection, and of some of the suggested solutions, might be of interest—not that I have any original contribution to make to your knowledge on the subject, but because it might offer an interesting topic for discussion by the Society as a whole.

By "latent malaria" I mean the condition existing in those cases in which, following an infection differing as far as we can determine in no respect from one producing in the usual time some clinical manifestation of malaria, there arise no clinical symptoms at all, or their onset is delayed for weeks or months, although the parasites may be more or less constantly present in the circulation, following, as far as we can determine, the normal life-history characteristic of their intra-corporeal existence.

In a sense, such cases may be roughly grouped into two classes; first, cases of long incubation but followed eventually by clinical

*Read before the Louisville Clinical Society, February 11, 1902. For discussion see page 219.

manifestations arising without any apparent immediate exciting cause; and second, cases in which there are, as far as we can see, no clinical manifestations, or if such do occur their onset seems to be determined by some existing cause entirely independent of the malarial infection. Of course no hard and fast line can be drawn between these two classes, but in a general sort of a way it may be said that there are clinical reasons for the distinction—possibly a third class might be made of cases presenting relapses after exceedingly long periods, separated by a condition of apparently perfect health.

The older clinicians used to recognize a disposition to malarial attacks in certain individuals under conditions which our present knowledge shows precluded the chance of recent infection; and while "malaria in the system" was (as indeed it still is) very often a cloak for ignorance, there is now known to be a scientific basis for such a diagnosis.

We have then in the first class cases, in which weeks or months after infection, the host remaining meantime in apparently perfect health, there is a sudden development of symptoms due to presence of the organism. How long such periods of incubation may last no one knows. Bloxall reports one case of forty-eight days' incubation, and another of one hundred and eighty-four. In these instances the cases occurred on shipboard after a definite, limited exposure. Craig reports a case presenting apparently an incubation period extending from September until some time in March. This was an officer who left Cuba in September after having fever, and remained well until March, the time being spent in New York and San Francisco. Since Craig's book was published the existence of infected mosquitoes has been demonstrated at the Presidio, but even so, they would hardly have been active during even a San Francisco winter. I have notes of a case extending from September to the following May. This was the case of a sailor who in October, 1898, went on board a lightship off the Delaware capes. She was fully four miles from the nearest point of land, and the patient remained continuously on board until February, 1899. In the terrific storm that occurred at that time the lightship was torn from her moorings by the ice and carried to sea. She was towed in and lay at a pier for about a month; but it was the coldest winter for years, ice in the harbor five feet thick, so infection at that time can be excluded. Except at this time patient was never ashore until the middle of May, when he was brought ashore with a typical malarial attack, lasting a

few days, the æstivo-autumnal parasites being quite abundant. In the second class, we have cases in which persons live for long periods in perfect health and then following some unusual exposure to the elements, or some shock to the general system, as a fall from a horse, a broken leg, or the receipt of other injury, will immediately blossom out into a typical malarial paroxysm. The following is an illustration from my own observation :

A gentleman long employed on the Congo was invalided home, and came out to Virginia, residing in the mountains, where malaria was unknown. He went to visit a relative at a distance of about thirty miles, and having to cross a river was compelled to wait some hours or so, after a hard day's ride, in a damp, cold mist, while the ferryman was being found, getting thoroughly chilled. In the morning he had a severe paroxysm, the first for months. Again, we have all seen operations for one thing or another in patients apparently well immediately followed by sharp attacks of malarial fever. Now, if in the mosquito season in a malarial section, the question might be raised whether the manifestation was not a simple coincidence, but in the cases mentioned above this can be excluded, except possibly in Bloxall's cases. Unquestionably cases in which the parasites exist in their for some reason latent or non-symptom producing state are much more numerous than formerly reported. Koch, for instance, found parasites in the blood of a large proportion of the people in certain sections of German West Africa, especially in children. Craig reports that forty per cent of the soldiers admitted to the Presidio hospital without malarial symptoms had parasites in their blood. There were fifty-six cases in all admitted for various reasons during nine weeks. Of course, as these were all in patients admitted for other disease, some may have had the malarial symptoms masked by such disease, and almost certainly some of the diarrheas and dysentery were probably malarial, still there is no doubt that many were cases of true latency.

Now, what is the explanation of this latency? Briefly, there have been so far offered (at least as far as I know) but two hypotheses; and I have a third, which perhaps should not be called a hypothesis, but rather an explanation of the first hypothesis. These two hypotheses are, first, that the parasites lie dormant in the spleen or bone marrow; second, that for some cause the parasites multiply to such a slight extent that they fail to produce a febrile reaction. This last is the opinion of Thayer, accepted by Mannaberg. It is quoted by Marchiafava and

Bignami, who cite certain facts in support of it, but do not commit themselves to either view. Manson seems rather inclined toward the former view.

For myself, if I may venture upon holding any opinion differing from the unquestioned leaders in the malarial field, I am inclined to believe that under certain circumstances the apparent dormancy of the parasites may be due to their following, under the influence of conditions not at all understood, an entirely different life cycle, this opinion being, as stated before, simply a variant of the first hypothesis. The advocates of the second hypothesis urge in its defence the frequent finding of parasites in the blood of persons apparently entirely well, and the fact that in a few such cases serial observations have shown such parasites passing through the regular changes of their life history. The evidence, it must be confessed, is strongly suggestive of the interpretation put upon it, and unquestionably those cases in which relapses occur a few days after a change of altitude (a very common occurrence), or following a chilling, etc., can be explained by the theory that the depression of the patient's resistance gives the circulating organisms a chance to multiply more rapidly, and so bring about a paroxysm. That is to say, that while under previous conditions only a small number of parasites survived to maturity, under the more favorable conditions offered by the reduced condition of their host they survive in sufficient number to produce a paroxysm; but it is to be observed that the paroxysms arising thus only occur after sufficient time has elapsed to cover the normal period of incubation of the particular type of organism present.

This has been verified numbers of times; I have seen it repeatedly, while there seem to be cases in which the paroxysm follows the exposure in considerably less than the normal period of incubation. I think I have seen such, and heard of others; *vide*, the gentleman from the Congo, referred to above.

The shortest period of incubation is with the tertians, so even if the exposure to depressing influences occurred just before the time at which a group of parasites were ready to mature it would be about forty-eight hours before the increased number of parasites surviving as a result of the depression of their host could pass through their life cycle, mature, and cause a paroxysm; while if the exposure occurred just after the time for maturing, two cycles would have to be lived through before a paroxysm could occur, *i. e.*, the scanty survivors

normally present would have to live out their lives, sporulate, and their temporarily increased progeny go through the same process before a paroxysm could be produced, namely, ninety-six hours in all.

I am certain that relapses and initial attacks in the already infected occur in less than this period after exposure to secondary exciting causes. Again, take the well-known class of cases in which relapses occur regularly every two weeks, or every month, or every six weeks. In many of these you may search the blood day after day without finding any thing until the relapse is about due. It is difficult to believe that parasites can go on living out their regular cycles, with only enough reproductive force to barely keep themselves from extinction, and then at definite, regular intervals produce a progeny of full vigor, whose children immediately relapse into partial sterility or at least greatly diminished potency. It seems to me that for the explanation of these cases we are driven to the suggested third hypothesis, viz., that the parasites remain in spleen, bone-marrow, or non-peripheral circulation; not dormant, but either passing through a different life-cycle or with greatly diminished rapidity, though with typically regular periodicity. I say "not dormant," because to suppose them dormant necessitates supposing a periodic and sudden revival, determined by no apparent cause, and an equally sudden return to dormancy, which, like the sudden increase in fertility necessitated by the second hypothesis, is quite different from what we know to be the usual habit of such parasites; whereas the supposed change in either kind or duration of life-cycle seems to be rather along the lines of the parasite's natural development.

So much for the theoretic side. Now a word in conclusion as to the clinical importance of the matter. Considering the immense variety of malarial manifestations, neuralgias, diarrheas, pseudo-dysenteries, neuroses, etc., besides the febrile paroxysms of various types, and bearing in mind the possibility of latency for weeks or months after infection or apparent recovery, I think it is not too much to say that in any section where malaria is endemic we should not be satisfied in obscure cases of illness of any character, from hysteria to dyspepsia, until we thoroughly examine the blood.

I know I have, by the light afforded by such examinations, been able to cure apparently severe dysentery; cases which were apparently acute Bright's; cases of mysterious anemias, even a typical hemiplegia.

SKIN GRAFTING, WITH REPORT OF CASE.

BY J. T. DUNN, M. D.

*Professor of Rectal Surgery, Lecturer on Surgery, and Demonstrator of Operative Surgery
in Kentucky School of Medicine.*

Since the introduction of antiseptics in surgery a great many advances have been made in various operations. In none of these do we find more rapid progress than in skin grafting. This operation may be done at the present time with fair assurance of success. There are several methods of skin grafting to select from :

1. By the auto-epidermic method (the grafts taken from the patient).
2. Hetero-epidermic method (grafts taken from another).
3. Zoodermic method (grafts taken from a lower animal).

In the hetero-epidermic method grafts may be taken from an amputated limb as late as ninety-six hours after the removal. They have even been taken from well-preserved cadavers. The auto-epidermic method consists in the use of (*a*) scrapings of skin, (*b*) corn shavings, (*c*) skin of blisters, (*d*) dried sterile strips of epidermis obtained by vesication or accidental scalding.

Lusk's Method. Obtain epidermis by cantharides blistering, or by actual burn or scald. Place the epidermis removed from these blisters upon pads or glass plates and sterilize in an ordinary surgical sterilizer. These sterilized strips must be dried and kept for future use. Scales thus prepared have been successfully planted four hundred and eighteen days after removal. A healthy granulating surface is essential to success. Apply these dried sterilized scales, which should be one twelfth of an inch square, about half an inch apart. They should be covered with sterilized gauze saturated in balsam of Peru one dram, castor oil one ounce. Several layers of cotton should be placed over this dressing. Ten or fifteen days should elapse before this dressing should be changed.

Reverdin's Method ("pin grafts"). The instruments required are a needle in a needle-holder, and a sharp razor. Proceed by transfixing the skin with the needle and raise it to a cone. The apex of the cone is cut off and applied directly to the granulating surface in rows, with small spaces between. Chemical antiseptic solutions must not be used upon the granulating surface, as they injure the grafts. Cover grafts with strips of oiled silk or gutta-percha tissues; then gauze and cotton. This dressing should not be changed for five days.

Krausse's Method. Long strips of skin and the entire thickness is used. This may be taken from the anterior surface of the thigh, leaving the elongated ellipse, which can be closed by suture. This graft is planted on a granulating or fresh surface, and it is not necessary to suture, as the dressing will hold it in place. As a rule the grafts discolor and blister, and the epidermis is exfoliated, the deep epidermic layer and cutis alone remaining, and they soon replace the lost layer of epidermis.

Thiersch's Method. This method consists of thin slices of skin composed of epidermis, rete, and part of cutis. Attention is called to the claim that these grafts develop a vascular connection to the underlying tissue in from eighteen to twenty-four hours. This method is of universal application, and may be employed immediately after an operation which leaves an open surface, or after granulations become established. These grafts may be applied over the connective tissue, periosteum, bone, and even fat, a granulating surface not being necessary. The method is as follows:

Select a hairless portion of the body (as extensor surface of the arm or thigh), which should be thoroughly sterilized repeatedly during twenty-four hours preceding the operation. The wound to be covered must be dry and free from blood; the skin to be removed must be made tense, and thin slices are removed with a razor. They should be from one to several inches in length and breadth. These are applied at once to surface, or are permitted to float temporarily in a basin of normal saline solution until used. The wound covered with the grafts thus obtained should be dressed with rubber tissue strips one inch wide, overlapping in such a way as to allow free drainage. Over these are applied strips of gauze and cotton, held in position by liquid glass or plaster-of-paris dressing.

Of all these methods that recommended by Thiersch seems to be the most successful, and therefore the most favored. In the case here reported, in which this method was used, fully 90 per cent of the grafts were successful.

The case in which I had occasion to use skin grafting was Mr. Frank S., who was injured in a tobacco factory of this city. While feeding tobacco through heavy rollers for the purpose of compressing, or removing the excess of licorice compound with which the tobacco was saturated, the left hand became accidentally engaged between two heavy rollers used for this purpose. These rollers were ten inches in

diameter, with a 4-inch rubber surface and a 2-inch steel center. Being thus fixed, the left hand, arm, and shoulder passed between these rollers until the neck and chest were reached. The rollers continued to roll; the body refused to enter further into the machine; thus a laceration of the skin resulted, extending from the middle of the clavicle down under the anterior axillary fold through the axilla, over the posterior axillary fold, and up to the middle of the spine of the scapula.

The skin was separated from the underlying tissues down to the middle of the arm, having absolutely no attachments to any substances, and only a narrow strip of skin on the top of the shoulder connected it to



FIG. 1.

the skin of the arm. The biceps muscle was partly ground away, the brachial artery and vein and median nerve being distinctly seen in the open wound. The patient was removed to the Norton Infirmary, the wound sterilized and closed with sutures. On the front of the shoulder, however, there was such an amount of injury to the skin that it was necessary to remove an elliptical-shaped piece. The patient was placed in bed, with hot applications to the arm to favor the circulation, and in the course of twenty-four or forty-eight hours the integument, which had been subject to most severe pressure about the shoulder-joint, became markedly discolored and gradually grew darker, which finally terminated in a complete slough of the skin covering the shoulder, extending from the middle of the clavicle back over the deltoid muscle to the spine of the scapula and from the acromion process down to

below the insertion of the deltoid muscle. In about three weeks this slough had thoroughly separated and healthy granulations were established. (See Fig. 1.) He was advised to subject himself to the operation of skin grafting, in view of the fact that such a large surface was denuded, and that it would take many months to recover without it.

The preparation consisted of local applications of normal saline solution to the arm and shoulder for three or four days previous to the operation. These moist dressings were changed at intervals of one or two hours. The thigh, which was selected as the point from which



FIG. 2.

the grafts were to be removed, also underwent a process of preparation, which consisted of a clean shave, bichloride scrubbing, and a green soap poultice the day before the operation, followed the next morning by soap and water used with a scrub-brush, bichloride irrigations, and an alcohol bath. The limb was then enveloped in the saline dressing from the hip to the knee, covered with cotton and bandage.

On the 26th of October, the day of the operation, an anesthetic was administered, the limb was again scrubbed with soap and water, washed with ether, and a final irrigation with normal saline solution. The wound upon the shoulder was also thoroughly irrigated with normal saline solution. Being thus prepared, a sharp razor, two hooked retractors (made especially for this purpose, consisting of ten or twelve

sharp teeth to each retractor) were made to engage the skin, pulling in opposite directions, in the hands of an assistant. The skin thus made taut, I removed slices containing the epidermis and rete and part of cutis, as described by Thiersch, about one or two inches long and three fourths to one inch wide, which were transplanted immediately to the granulating surface of the shoulder, where it was pressed in contact with the granulations by a sponge saturated with a hot saline solution. Other grafts were lifted and located in the same manner. There were thirty pieces in all. Care was exerted to see that these grafts were kept hot by sponges and gauze which were saturated with hot saline solution until the operation was completed; the saline gauze dressing was then removed and narrow strips of rubber tissue were placed in lattice-fashion upon the grafts. Over these many thicknesses of gauze were applied and thoroughly saturated with saline solution; upon this, cotton and bandage were applied. The thigh was dressed with rubber tissue in the same manner and covered with gauze, cotton, and bandage. The patient was placed in bed and directions given for the dressing upon the shoulder to be kept thoroughly saturated with the hot saline solution night and day. At the end of the fourth day the dressing was removed, care being taken not to lift the grafts from their new bed.

I was very much gratified, upon the removal of the rubber tissue, to find that the grafts were in splendid condition and that at such an early date as four days they had taken hold of the granulations, with the exceptions of three grafts, which were upon the back of the shoulder just at the point where pressure by the recumbent position of the patient had caused them to slough. A similar dressing was applied, and the nurse directed to continue the hot saline applications. On the sixth day again the dressing was removed and the grafts found to be in a healthy condition. On the eighth day the dressing was removed and photograph taken (Figure 2), which shows the sizes of the grafts and their healthy condition at that date. Daily dressings were now instituted, as there was considerable discharge. The hot saline applications were discontinued; also the rubber tissue, and an ordinary gauze dressing applied after the tenth day, at which time the discharge had ceased very materially.

One point which I noticed about these grafts was that they were very tardy in spreading toward each other, and it was ten or twelve days before I could notice any material change in their size, at which

time, however, they began to spread rapidly, and in the course of three or four weeks they were all touching. As for the leg, there was never any trouble with it, healing taking place within ten days or two weeks.

LOUISVILLE.

ADENOIDS OF THE PHARYNX.*

BY P. RICHARD TAYLOR, M. D.

Dean of the Hospital College of Medicine; Professor of Clinical Ophthalmology; Professor of Otology and Laryngology, etc.

Gentlemen of the Society: I will call your attention this evening to adenoids. I will deal with the subject very briefly; I shall not give a pathological description of this malady, but simply call your attention to this unfortunate condition, which is opportune at this particular season of the year. Many of our writers consider adenoids the result of frequent inflammatory processes of the upper air passages, while other equally eminent writers believe that heredity plays an important part in the production of these troublesome growths. Our attention was called to these lymphatic hypertrophies about forty years ago; only in the last ten years have they received any thing like the attention due them. This abnormal tissue is found in the vault on both sides of the posterior wall of the pharynx and oftentimes throughout the entire pharyngeal mucous membrane. The peculiar facial expression of children affected with adenoids, associated with deafness, generally leads us to suspect that these hypertrophies exist in the pharynx. In extreme cases there is difficulty in eating and swallowing, and in very small children interference with nursing; a discharge from the nose more or less profuse. These children, as a rule, are weak, delicate, and poorly nourished, generally dull and listless and at all times stupid. With all these symptoms present, a diagnosis of adenoids can safely be made, but with the pharyngeal mirror or the finger all doubt of their presence can be eliminated. From the time that our attention was first called to adenoids, in 1860, up to a few years ago, it was supposed that these growths would disappear about the age of puberty, but clinical experience has taught us that this is the exception and not the rule, for we frequently remove adenoids as late as the age of forty which have existed since childhood.

Most of the distressing symptoms disappear about the age of puberty, from the development and widening of the pharynx at this

* Read before the Falls City Medical Society, January, 1902.

time, making the obstruction and interference by these growths proportionately less. The nutrition of the child usually improves; the embarrassment to the respiration is lessened. The facial expression changes, and oftentimes all the distressing symptoms disappear except the peculiar nasal voice and the deafness, which persist in almost all cases.

Operative interference is necessary in all cases to give the desired relief. Internal medication and topical application alone have failed to give good results. Adenoids should be operated on as soon as diagnosed. The denser growths should be removed with forceps and currettes, while the superficial ones may oftentimes be removed with the curette alone. If the operation be thoroughly done there is no likelihood of the return of the growth. Secondary operations are usually necessary where the former operation was incomplete.

Whenever adenoid tissue is left in the pharynx it will always continue to offend. General anesthesia is to be avoided whenever possible; if this be unavoidable, the patient should be completely anesthetized and the operation done with the patient's head turned slightly to one side and so low that the blood will flow from the nose and mouth instead of being dammed back upon the larynx. I believe that most of the deaths which occur during this operation under general anesthesia are due to the blood running into the larynx. Chloroform I believe to be the safest anesthetic to be used in the removal of adenoids.

A thorough operation will always remove the peculiar facial expression, the embarrassment to the patient's respiration, and the nasal sound in the voice. The improvement in hearing is usually very marked in the majority of cases, but oftentimes the adenoids extend well up the Eustachian tube, where they can not be reached with the forceps or curette, and deafness in these cases will persist. Seventy-two per cent of the cases of deafness are due to adenoids. The earlier the diagnosis and the earlier the case is operated on the better will be the result. We are led to believe that adenoids are oftentimes congenital. Dr. Walker, of New York, reports a case operated on at the age of eighteen days. Many other cases are reported where the operations are done on children only a few months old. A failure of the practitioner to recognize this condition and to recommend its removal will always result disastrously to his patient.

BORO-CHLORETONE, THE NEW SURGICAL DRESSING.

BY WALTER P. ELLIS, M. D.

A preparation that possesses all the good, with none of the bad or disagreeable properties of iodoform, has been a desideratum for "quite a while." In fact, from the time that drugs began to be generally used by surgeons as a local application to wounds, both accidental and surgical, there has been a demand for some drug that possessed its antiseptic, anesthetic, and healing powers without its undesirable qualities, such as the possibility of poisonous action when used for too long a time, or over too large an extent of surface, and its intensely disagreeable odor, which manifests itself at all times and under all conditions. No other odor, less obnoxious, is able to overcome it, and the fact of the almost universal use of iodoform in venereal diseases has caused the laity to associate the peculiar penetrating smell with those diseases. That alone is quite sufficient to render its use in many innocent cases, where it is otherwise strongly indicated and its therapeutic effects desirable, entirely out of the question.

The local anesthetic quality of the new hypnotic, chloretone, united to the antiseptic and healing properties of boric acid, as is found in the new drug recently introduced to the profession by Messrs. Parke, Davis & Co. under the name of "boro-chloretone" forms an ideal preparation for the purposes for which iodoform has been so extensively employed. The writer has had it under observation and in almost constant use since it was first brought to his notice some months ago. Its use has been productive of such satisfactory results that he feels constrained to give others the benefit of his experience. In two cases, especially, the outcome was gratifying to such a superlative degree as to merit special report.

CASE 1. A woman, white, aged twenty-eight, the wife of a coal miner. For seven or eight years she had suffered from chronic ulcer of the leg, and had been treated by many physicians; in fact, from its first appearance she had never ceased her efforts to effect a cure. In spite of all, when she came under my care there were two ulcers on the right leg just above the ankle, one on the anterior tibial aspect as large as a silver dollar, and another, somewhat smaller, three inches above the inner malleolus. Both were then in a very unhealthy condition, with ragged, undermined edges, and discharging a foul, malodorous pus.

quite freely. The lower half of the leg was greatly enlarged and covered with skin of a dark reddish purple, inclined to break down and start new ulcers upon the slightest provocation. The history she gave of treatment by men of undoubted ability and large experience, faithfully and persistently followed, yet attended in every instance by ignominious failure, was not calculated to raise very sanguine hopes of my efforts being rewarded with success.

About that time I had been having more than ordinary success in similar cases with a certain proprietary unguent, and could see no reason why it would not yield as good results in this case. After removing the unhealthy tissue by a thorough curetting, followed by the free use of an antiseptic wash (1-3000 bichloride of mercury) to produce as nearly an aseptic condition of the parts as was possible, the unguent mentioned above was prescribed, with fair prospects of a successful issue. At the end of a week's use of this treatment, the dressings being changed daily, the husband reported no progress. At the end of three weeks it was clear no good had been accomplished; in fact, the husband did not hesitate to express his belief that my treatment so far had been a disadvantage, and had made the condition worse. About this time my attention was called to boro-chloretole by Parke, Davis & Co.'s traveling man, and I determined to use it in this case. After putting the lesions in a condition as nearly approaching complete asepsis as was possible with the help of the bichloride solution, the boro-chloretole was dusted over them freely and covered with aseptic gauze, held in place by an ordinary roller bandage. This dressing was changed daily, and I soon had the satisfaction of seeing the ulcers take on a healthy action and grow smaller. The improvement was continuous and uninterrupted, and in a little over four weeks they were entirely healed, leaving only a slight scar.

CASE 2. Col. R. E. H., aged seventy-six, proprietor of a large saw-mill in which many small circular saws are used, met with an accident in which the little finger of the left hand was sawed off at the metacarpo-phalangeal joint, the same joint of the third finger sawed completely out, leaving the finger hanging only by the skin on the palmar surface, and the middle finger torn and mutilated on the extensor side for almost its entire length. The wound was cleansed, the ragged ends of tissue removed; the third finger was stitched in place, and the wound of the middle finger brought together in the best possible manner. The whole was then covered pretty thoroughly with

boro-chloretona and bandaged. The dressing was changed on the third day, and daily thereafter. It did remarkably well from the first, in spite of the patient's advanced age, and in three weeks from the date of the injury the healing was complete, there having been but little pain at any time, and no suppuration to speak of. There were three fairly good fingers saved on a hand which looked at the time as if all, save the index, were irretrievably damaged. The rapid healing, freedom from suppuration and pain, were undoubtedly due to the boro-chloretona, which was dusted freely over the parts at each dressing.

In conclusion, I will say that my experience, covering many cases similar to those reported, has convinced me that boro-chloretona is the ideal dry dressing.

LIVERMORE, KY.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, February 11, 1902, William Cheatham, M. D., President pro tem., in the Chair.

Case for Diagnosis. Dr. George B. Young: I have a clinical case that I desire to bring before the Society in order to get the benefit of the combined wisdom of the members in regard to the diagnosis.

This patient, a male, aged twenty years, has a history which briefly is this: For several years every five or six months he has an attack of what we would term catarrhal jaundice. Usually these attacks have not markedly interfered with his work, but the present attack is much more serious than usual.

His father, who is an elderly man now, has been the subject of similar attacks about every six months all his life. He has two brothers who are similarly affected. His father's brother and sister are also subject to attacks of a similar character every few months; seven cousins also.

This boy came to the United States Marine Hospital yesterday complaining of pain in his side. He said it hurt him more or less when he tried to walk. He has a spleen which extends down below the ribs, and the notch in the spleen can be plainly felt. His liver is apparently

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

as large as a ham; he has no fever. According to his own account, this is the first time he has been actually laid up during one of these attacks. While I have not had time to look into the subject thoroughly, I think it is one of those rare cases of hereditary leukemia. I am going to take a radiograph of the case to-morrow to see what it will show.

I present the case especially because I confess my own diagnosis is not certain, although I think when his blood is examined it will be found that he has a leukemia.

Dr. Berry: When this boy entered the hospital his history was carefully noted. He says that his father's mother also had similar attacks, although she is still living, at about the age of eighty years. His aunt, his father's sister, is now said to be at the point of death from conditions resulting from the same disease. He has seven cousins, daughters of the aunts already mentioned, one of whom was operated upon two years ago for enlargement of the spleen. He does not know the nature of the operation. This patient had what was said to be malarial fever six years ago, but from his description of the disease and the treatment adopted I take it to have been a typical case of typhoid fever. He had rheumatism a year ago, lasting three months; during this attack he had some involvement of the heart. He has a roughness of the first sound now. He has also had urticaria, and some other diseases of minor importance.

Discussion. Dr. H. N. Leavell: I am inclined to believe that this is a case of leukemia rather than any derangement of the liver; first, on account of the family history, because we know leukemia is prone to be hereditary in its nature; then, too, on account of the excessive size of the spleen and the great amount of anemia, as expressed by the color of the conjunctivæ, the color of the mucous membranes, as well as the color of the retina, the retinal vessels not giving us the red reflex we would expect to find in one not so anemic in type. There is only one positive way of making the diagnosis; that would be to examine the blood to determine whether we can find the plasmodium malarix, or any derangement of the blood corpuscles which would point to leukemia.

Dr. J. W. Irwin: This case is one of unusual interest. The clinical features of the case are something that we rarely meet with, and, as the previous speaker has said, without an examination of the blood the case would point to a state of leukemia, but in so doing it does not

fulfill all the indications of leukemia. Periodic attacks of jaundice are by no means common in leukemia, if they occur at all. The feature in this case that attracted the greatest attention is the periodical attacks of jaundice. The next point of interest is the hereditary history; the father and an aunt on the father's side, and the father's mother, all have had symptoms and a history alike, as have also had seven cousins on the paternal side. The extraordinary thing in this case is the recurring attacks of jaundice. In the absence of a blood examination we must look upon the case as being one of leukemia with some doubt. There is more doubt thrown upon the case owing to the length of time it has lasted. He is now over twenty years of age, and has had the trouble all his life. Cases of leukemia, as a rule, terminate in a very few years. His family connections have lived to old age, and for a case of leukemia to live to old age would certainly be worth recording. The old age of his antecedents, and his own periodic attacks of jaundice, all go to show that there is some doubt as to it being a case of leukemia; but that pseudo-leukemia does occur in the course of certain diseases there is also no doubt.

Since Laveran discovered the plasmodium malarie many experimenters, microscopists, pathologists, and others have investigated the question of malaria very closely, and they have found that children born of malarial mothers contain in their blood the plasmodium. There is no reason to suppose that this condition may not have been going on for years, and that there may have been a malarial cachexia existing, and in saying this it does not preclude the possibility of pseudo-leukemia coming on in the course of this disease. The symptoms tend more to show that peculiar form of disease known as chronic hereditary malarial cachexia. We have here an enlarged spleen, an enlarged liver, a profound anemic state; we have a mitral murmur, and while a great part of this murmur appears to be anemic, yet there is mitral disease. We have mitral insufficiency, with dilatation of the left ventricle of the heart. The reason I say we have mitral disease in addition to the anemic murmur is that we have an intermittent condition of the pulsations, and wherever we have intermissions conjoined with a murmur, though it may be only apparently anemic, we find invariably mitral disease, and in addition to that we often find structural changes in the walls of the ventricle itself; so we have these changes here, in my opinion. I think this might have been regarded from the beginning, taking into consideration the history, a case of

hereditary malarial cachexia; and while there is no positive evidence of sharp malarial attacks in this young man, or in any of his antecedents, yet this does not preclude the possibility of this whole trouble being of malarial origin. That he might now have evidences of pseudo-leukemia there is perhaps no doubt; such a thing does occur, but I do not believe that this is the disease. The jaundice goes to show that there is some swelling about the gall-ducts leading out of the liver, stopping the flow of bile, diverting it in different channels.

Dr. Ewing Marshall: I agree with Dr. Irwin in the malaria idea. Not infrequently we see whole families in malarial districts having a similar appearance to this young man. I do not care to speak to the subject further than to say that I agree with every thing the previous speaker has outlined.

Dr. T. P. Satterwhite: I want to ask the gentleman who reported the case to pay especial attention to the heart in the event the case comes to an autopsy, of which I see no possibility at the present time. First, the apex beat is in its normal position, so far as I can observe; second, there is no murmur so far as I can detect. There is profound anemia. The jaundice which the patient shows might arise from a condition of chronic malaria. He may live on indefinitely.

Dr. George B. Young: I shall take pleasure in reporting to the Society at its next meeting what we find in making a blood examination. I regret very much this was not done to-day, but it was impossible owing to the state of the weather, it being too dark. I also expect to have at the next meeting an X-ray picture.

I had thought of the possibility of this case being malarial in origin from the first, but the boy only came into the hospital last evening, and as the case was rather obscure I thought it would be interesting to bring him before the Society and get the expression of an opinion and the wisdom of the members as regards diagnosis and treatment.

Dr. Berry: Dr. Irwin and some of the other gentlemen have spoken of malaria. This patient told me that five years ago he was treated for what was called malaria, of some kind. The attack lasted three months, and he was kept on a milk diet during that time, so I presume it was a case of typhoid fever and not malaria. With that exception, he has had no attack of any thing like malarial fever so far as I can learn. He has been having jaundice without fever ever since he can remember.

Dr. William Cheatham: Upon examination with the ophthalmoscope I find this boy's optic nerves very pale; all the nutrient vessels of the head of the nerve absent. The retinal vessels are very pale; some of the vessels very tortuous.

The essay of the evening, "Latent Malaria," was read by George B. Young, M. D. [See page 200.]

Discussion. Dr. W. F. Boggess: I do not know when I have enjoyed a paper more thoroughly than the interesting essay read by Dr. Young, especially because of its importance to the general practitioner of medicine. If it were not for the fact that we have these irregular forms of malaria, and that we can assign many indefinite diseases and symptoms to a malarial etiology, some of us would have to quit practicing medicine, I am afraid. But that we do see delayed and irregular manifestations of malaria is a fact, and we are in the habit of describing the so-called latent malaria. I know for years it has been my experience that people coming from a malarial district, presumably free from any malarial manifestations, and having no history of malaria for a considerable period, after undergoing even slight surgical operations will develop what is denoted by the text-books as post-operative malaria. I think, too, we see these same conditions occurring after delivery, and described in the text-books as post-puerperal malaria. It is sometimes a doubtful question whether the little febrile attack that sets up after delivery, for instance, is due to auto-intoxication or a malarial affection, but we do see these conditions.

I was struck some years ago with a statement made by Dr. Joseph M. Mathews, who does a great deal of work in his line for Southern physicians. He told me of a long series of cases he had seen where, after surgical operations, there had been well-defined attacks of malarial fever, where undoubtedly a latent malaria had been whipped up following surgical operations. It has always been a hard question for me to explain just why this condition should exist. Having ordinarily a fixed incubation period for malaria to develop—having a certain typical course for it to run—why should we have these irregular manifestations? How can we explain it? I find great difficulty in explaining it to students at school.

I rather hold to the theory advanced by Dr. Young, and think his amendment to the old view is a good one, that the plasmodiæ lie latent

in the bone marrow or in the spleen—possibly not found in the peripheral circulation—and under some favorable condition commence their development; they are suddenly whipped up into their accustomed state of vitality. We do not know much about the true incubation period of the plasmodiæ; we do not know much about the peculiar blood conditions—toxines, if you choose—which exist in the blood that are antagonistic to the rapid sporization and rapid development of the malarial germs, but we do know that in the absence of toxines malaria runs a regular course, and there are certain physical conditions which seem to be antagonistic to the rapid development of the plasmodiæ.

We have reason to expect that along in January, February, and March, accepting the mosquito theory as to the cause of malaria, that no cases of this disease would be found; yet cases have been observed developing five, six, or seven months after possible infection by the mosquito—typical malarial infection being present—and I think the most plausible theory is that the plasmodiæ are present in the system, lying latent in some of the internal organs away from the peripheral circulation, where their habitat is more antagonistic to their development than in the peripheral circulation, and for some reason not clear to us they suddenly develop and proceed through their regular cycle, producing the complex of symptoms which we understand as malaria.

Dr. William Cheatham: In the small line of surgery which I do—connected with the eye, ear, nose, and throat—it is very common to have a malarial attack light up soon after operation. I mention this to emphasize what Dr. Boggess has said.

Dr. H. N. Leavell: I have enjoyed the paper exceedingly, principally because of its extremely scientific nature. I agree with Dr. Boggess that we see a great many cases of post-operative and post-puerperal malaria, but think we are somewhat prone to jump at conclusions and make a diagnosis of malaria in these cases when the symptoms may be due to other causes. If we will look into the matter a little further, in the post-puerperal cases, for instance, we find the exciting cause is a retained placenta or secundines, which has set up an auto-intoxication. Let me reiterate that we are sometimes too prone to call post-operative and post-puerperal conditions malaria, when the symptoms had better be attributed to other causes. There is no doubt that after accidents of various kinds the condition of the system is lowered in vitality to such an extent that the malarial germs may more readily develop and assert their functions in producing a malarial attack.

Personally, about ten years ago I had a fall from a wheel, injuring my knee considerably, necessitating my lying in bed for a few days; and it was not more than three or four days after the accident, when the inflammation in the knee had about subsided—when there was no evidence in the knee of inflammation sufficient to excite any febrile condition—that a malarial paroxysm developed and I was laid up for six weeks with a typical malarial attack. My previous habitat was not in a malarial district (Piedmont, Virginia), and I believe I had contracted malaria after coming to Louisville, and that this fall which I had lowered my vitality to such an extent that the malaria developed. We must also remember how the malarial organism enters the system. There is rather a variance of opinion in regard to this. Some people believe that the organisms enter by the respiratory tract; most of them believe it is through the digestive tract and by the skin. Of course we believe—the majority of us, at least—that it is through the latter methods that we contract malaria, from water largely. I remember a case that came under my observation a few months ago. An individual who had been in the swampy regions of the country on a construction train said that the whole crew and himself were infected with malaria, and when they left that district they began immediately to get better, but when they returned the malarial attacks also returned. He, thinking that it was due to the water in the malarial district, began drinking water which had been previously boiled, from the engine tank, and he had no further trouble from malarial paroxysms; and all the crew took it up, and they, too, ceased to have these malarial attacks.

This is an exceedingly interesting subject, and one which we have talked over a great deal, but this latency of malaria is rather more interesting than any other portion of the subject which we could discuss. In regard to the incubation period, as to how long it is, it is certainly evident from the cases which Dr. Young has reported that it may vary between a few days and several months, and we must remember also that the only positive way of demonstrating malaria is by means of blood examinations, and I believe we must not jump at conclusions too rapidly when we have febrile attacks following labor and following surgical operations.

Dr. J. W. Irwin: The essay will pass current anywhere, because the general practitioners have to deal with the conditions which Dr. Young has discussed. The subject is still more or less in its infancy as to the plasmodiæ or protozoa which are instrumental in causing malarial

affections. Three forms of the protozoa have been found ; mixed infection gives rise to certain phenomena and single infection to other phenomena. One form of the protozoa gives rise to the æstivo-autumnal type of the disease, etc. But no one has ever cultivated the protozoa and after cultivation extended it to man. Hence the greatest knowledge of the subject is that it has been found in mosquitoes which have sucked the blood of persons suffering from malaria. It is not denied that malaria may enter the system through the air we breathe, and there are numbers of such instances given. In Ireland there is no such thing as a mosquito, and yet for many years that country was overridden with chills and fever. How did it become implanted in man there? Certainly it entered through the alimentary canal or through the air. This was long before the days of Laveran. But a better state of drainage has done away with malarial fever in that country. The same remark also applies to Scotland. On the Isle of Cypress mosquitoes are not in great abundance, and yet it is a very unhealthful place owing to malaria.

As to the latency of malaria, if we inhale it with the air we breathe, it is very hard to tell when we get far enough away from the swamps where the malarial protozoa is developed. It may be carried on the winds for a distance.

People who live in malarial districts become inured to the effect of the plasmodiæ. There is a certain part of Western Africa in which negroes live to old age in the most malarious country known to us. If an Englishman or Anglo-Saxon happens to go there, within a year or two he dies, notwithstanding the fact that he has to keep taking quinine, or he returns completely broken down to his native country with disease which will shortly result in his death. Hence it seems to me that the survival of the fittest has much to do with the time it takes after infection for malaria to affect a person. After a person has become inured to malarial poison, relatively speaking, he may carry it in the system for a long time and will not be overcome by it ; on the other hand, when he removes from the malarious district, or following disease or accident, or during a lowered state of vitality from any cause, a malarial attack will develop. Some people are able to live in malarial districts and never develop the disease ; the malarial poison seems to have no effect upon them. If we extend this law still further, we find certain human beings on the earth who can not withstand vaccination ; the Eskimos, Polynesians, and some others die when

vaccinated. The Anglo-Saxon survives; he is vaccinated, and pays no attention to it. If one of the West African negroes from the malarious district should go to live in some crowded European city, within a year or two he will die of consumption, while the Anglo-Saxon in the same crowded city lives to a good old age. The same negro left in his normal habitat, the most deadly malarious country known, Western Africa, will live to old age. I think the idea of the survival of the fittest applies to latent malarial attacks.

Dr. Ewing Marshall: The question of latent malaria in childbed and following surgical operations is one that has interested me ever since I began the practice of medicine. Early in my career I saw numerous instances of what was supposed to be malarial poisoning after labor, and at that time I made it a routine practice, which I have not yet abandoned, of always giving my patients for some time before delivery some quinine, and after delivery, for a certain number of days, I also give quinine. Whether early in my career I used to see more septic cases than I do now, or whether results are produced by the administration of the quinine, at all events I do not see nowadays any elevation of temperature as a rule after delivery.

Dr. J. R. Wathen: I want especially to indorse what the essayist has said about frequent microscopical examinations of the blood in order to determine if we are dealing with a true malaria, or a condition due to something else. I have noticed medical students coming from Texas, Louisiana, and other Southern States where they have much malaria, fine specimens of manhood, who have never been troubled with malaria until they come North to medical colleges, and after being here a few weeks they seem to develop a violent attack of malaria especially affecting the liver, becoming very bilious. I have noticed quite a number of them, apparently in perfect health, suddenly taken with chills. I have made it a point to examine a fresh specimen of the blood from these patients, and have found as a rule only one type of the malarial parasite, and that type in a full state of development, segmentation or changes going on at the time of my examinations. I have made a number of these blood examinations from fresh specimens while the patient was shaking so he could hardly sit in a chair.

This is a question of especial interest to me, and I would like for Dr. Young to explain the reason for these violent attacks of malaria developing in young men whose history showed that they had never been affected with malaria previously.

Dr. T. P. Satterwhite: My experience of nine years in medical colleges enables me to corroborate what Dr. Wathen has just said. Many of the students coming from Southern States develop malaria, so much so that I always prognosticated that they would have use for quinine after they had been here a short time. In some cases they develop all the phenomena of a violent malaria, in others there is simply a distinct malaise, but quinine always relieves them. Druggists will tell you that the largest majority of their prescriptions have quinine as one of the ingredients, indicating that as a rule doctors believe in the latency of malaria. I believe the disposition is now to give smaller doses of quinine than formerly. Some years ago it was not unusual to give a patient eighteen, twenty, or even thirty grains; the quantity usually given now is much less.

Dr. Irvin Abell: I have met with the same experience as Dr. Wathen and Dr. Satterwhite. I have under treatment at present a medical student who had a perfect history in regard to health; he was a school teacher in Mississippi. He came here to study medicine, and soon afterward had mumps and developed an orchitis following, and while he perfectly recovered from this he has had a peculiar train of symptoms; blood examination shows the presence of the plasmodium of Laveran. I judge this was a case of latent malaria, as there was no history of an acute malarial infection. I have observed a number of cases of the third class Dr. Young speaks of. Students who come from Southern States, giving a malarial history, and after some simple affection promptly develop malarial symptoms which only respond to anti-malarial treatment. The best explanation I can offer is that the malarial germs remain latent in some of the internal organs, and only upon lowering of the vitality of the patient following some exposure, or some slight indisposition, the germs are induced to enter the general circulation.

Dr. George B. Young: In regard to the point made by Dr. Irwin, failure to cultivate the malarial organisms. It is true that we have failed to cultivate this organism, and in that respect we have not perhaps fulfilled Koch's three laws; but we have done this—we have taken the blood of patients suffering from malaria and by injecting it into other persons have produced typical malaria in the latter. This has been done in both the quotidian and æstivo-autumnal varieties of the disease, by introducing the blood into patients who had never been exposed to malaria, where repeated examinations of the blood showed

it to be entirely free, producing in due course perfectly typical attacks identical in character with the patient from whom the blood was originally taken. In other words, we have combined two steps necessary in Koch's law; we have not cultivated the organism in a suitable culture-medium outside the body, and then introduced it into the body of some animal or person and reproduced the disease, but we have in a sense made the person his own incubator. We have injected him with blood in which the plasmodiæ were circulating, and as soon as they passed through their life-cycle in his blood they have developed the disease in him.

Concerning the transmission of malaria by air and water: The profession was fully imbued with the idea that water was responsible for the disease. We used to fight over that a great deal. But as far as I know the pendulum has now swung further away from that position, until it seems to be pretty well settled in the minds of those who are entitled to speak with authority that while the aerial transmission seems to be excluded, there is a possibility of infection by water, but you will hardly find anybody who is willing to stake his reputation on it.

I did not know before that there were no gnats, as I believe the English usually call mosquitoes, in Ireland, but it has been suggested that other suctorial insects can transmit the disease; it has been said that the bedbug is capable of harboring the plasmodium, that he will bite a person suffering with malaria, take up the poison and transmit the disease to the next person he bites, and so on. That is to say, that he merely acts as a carrier of infection, and is not, like the mosquito, a definite host; just as Findlay explains those cases of experimental yellow fever which develop before the incubative period in the mosquito can elapse.

To say that we have no mosquitoes at any time of the year is a very wide statement. We have had some very cold weather in Louisville for the past few months. I have now in my laboratory a mosquito that was caught flying around the wards of this hospital a week ago. I have no doubt that many of them might be found in various places, cracks and corners, even during this cold weather. Some repairs to the attic, just over the ward, had probably dislodged her from her hiding-place, and finding the air of the ward warm she tried her wings. They have been found in Baltimore in cold weather; they have been found in New Hampshire when the thermometer was down to zero.

I recite the following case to emphasize the importance of examining the blood in obscure cases, especially in a malarial country: A youth was brought into the United States Marine Hospital at Memphis; he had complained of a little malaise for a few days, but did not appear to be seriously sick. He was a healthy-looking, robust fellow. The next day he developed a perfectly typical hemiplegia, the face and arm of one side and leg of the other. Sensation was much impaired, motion entirely lost. I examined his blood at once, and found he was simply alive with the plasmodiæ. I treated him with quinine in large doses hypodermatically, and in a few hours he had greatly improved; in twenty-four hours he had entirely recovered.

In this connection I desire to say a word of caution in regard to methyl and methylene blue. Methyl blue is a violent poison and should never be used; care should be exercised in writing prescriptions and methylene blue should always be plainly specified.

P. F. BARBOUR, M. D., *Secretary.*

Abstracts.

Actinotherapy: Gottheil: In a preliminary communication upon the use of concentrated light in the treatment of dermal affections W. S. Gottheil briefly reviews the work done by Finsen, Kime, and others in this field, and describes the arc light that he employs for the purpose. This is at present the only available source for the actinic rays of sufficient volume and intensity for therapeutic employment. Sunlight is, of course, the best and is costless; but it is too uncertain for satisfactory use. No combination of incandescent bulbs run on the ordinary continuous or alternating commercial current is sufficiently actinic, and the apparatuses arranged with them practically give us heat and no light baths.

The author employs an apparatus called the actinolyte, made by Kliegl Bros., of New York, which can be adapted to either the continuous or the alternating current, uses from twenty-five to fifty-five amperes, and gives a concentrated circle of light of from 20,000 to 30,000 candle-power. He is not prepared as yet to publish his results, but the progress of cases of lupoid and syphilitic ulceration has been most encouraging. The cosmetic results of this non-operative and

painless method of treatment are especially good—a point of the greatest importance, of course, when the face is involved. (The Medical News, July 6, 1901.)

Dühring's Disease in Childhood: Gottheil: Dermatitis herpetiformis, first described by Professor Dühring, of Philadelphia, is probably of commoner occurrence than is generally supposed, more especially in children; two cases are described by William S. Gottheil, of New York, in the June number of the Archives of Pediatrics. The resemblance at first sight to an ordinary eczema, dermatitis or impetigo is marked, and doubtless cases of the disease are not infrequently so classified. The points which distinguish the less common affection are:

1. The extreme obstinacy and chronicity of the malady; it being prolonged almost indefinitely by successive exacerbations or relapses.
2. Its original herpetic character and subsequent multiformity of lesions.
3. The intense pruritus.
4. Its recalcitrancy to treatment.

Any apparent eczema, dermatitis, or impetigo in children presenting these features should be carefully observed; a certain number of them will undoubtedly be found to be cases of Dühring's disease.

The Curability of Syphilis: Gottheil: Speaking of the curability of syphilis, in the symposium upon that disease in the October number of the International Medical Magazine, William S. Gottheil, of New York, takes exception to the opinion of its practical incurability which is prevalent in certain quarters. Every-day experience shows that the great majority of cases are cured in every practical sense, the occasional late relapses and accidents to the contrary notwithstanding. He concludes:

1. Syphilis is a curable disease, and may even, with restrictions, be called a self-limited one.
2. While cure in a given case can not be affirmed with scientific accuracy, the chances of its being the fact after a certain time under proper treatment are so great that it may be properly claimed to have been effected.
3. Practically, a patient who has been properly treated throughout the active stages of the disease, and who has had no manifestations of its persistence for several years thereafter, may be regarded as cured, and may be told so.

The Unrecognized Chancre: Gottheil: In the International Medical Magazine for October, William S. Gottheil calls attention to the frequent insignificance and fugacity of the syphilitic initial lesion, which leads to its non-recognition in quite a large proportion of cases. Ignorance of its occurrence, and not voluntary falsification, is the cause of the frequent absence of a syphilitic history in undoubtedly specific cases. The author calls attention to the following points of diagnosis:

1. The presence of a tumor as the original lesion. In its essence, and invariably at the beginning, the chancre is a small round-cell accumulation in the skin or subcutaneous tissue. Ulceration may occur, and usually does, or even phagadenism; but these are accidental, and epiphenomena and almost invariably the specific induration is appreciable at the base of the lesion.

2. The tumor is indolent, painful, and recalcitrant to treatment.

3. A peculiar and characteristic "stony" induration of the nearest lymphatic glands accompanies it, different from the general adenopathy that occurs later as a consequence of the systemic infection. Other lesions, as gummata, do not show it.

4. Chancre runs its full course in a few weeks, while tuberculosis takes months and carcinoma even years for its development.

5. The well-known signs of general luetic infection, osteocopic pain, cephalalgia, synovitis, general lymphadenitis, exanthema, etc., must be carefully and persistently searched for in every suspicious case. They may be so slight as to entirely escape careless examination.

COLEY'S FLUID IN THE TREATMENT OF MALIGNANT GROWTHS.—Wild does not consider that the results hitherto obtained justify the trial of Coley's fluid in any operable case of malignant disease, whether carcinomatous or sarcomatous. A recourse to it only wastes valuable time, and may render subsequent operation impossible. In cases of inoperable carcinoma and epithelioma there is no evidence of any permanent benefit, and the treatment is by no means free from danger. In the absence of any other means of effective treatment a careful trial of Coley's fluid is justifiable in cases of inoperable sarcoma, especially in the more rapidly-growing forms. A limited number of successful cases have been reported in which the disease was of this type, and other cases in which there was temporary improvement. Further researches are desired upon the after-effects produced by erysipelas, as it is by no means certain that the effects produced by the toxins are identical with those which result from an attack of genuine erysipelas.—*Manchester Medical Chronical.*

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FORTY-SEVENTH MEETING OF THE KENTUCKY STATE MEDICAL SOCIETY.

In this issue will be found the announcement of the forty-seventh annual meeting of the Kentucky State Medical Society, which will be held in the city of Paducah on the 7th, 8th, and 9th of May, 1902. The profession of this State, and all other States for that matter, should remember that we are going to enter upon a new field of action, in so much as the county, State, and national societies will all affiliate, and in order to get into the State or national society a doctor must at least be a member of some local society; that is, if he wishes to join the State Society he must belong to some county medical society, or some similar organization, and to get into the national association he must be a member of his State Society. We called the attention of our readers to these facts in a former issue of the PRACTITIONER AND NEWS, and we feel that we can not be too earnest in this matter. We have a great State organization—one of the very best in the country—and we ought to be proud of it, and every member of the profession should strive to lend a helping hand in this great work; hence let some one in the counties where there is no society take it on himself to organize a local society. All that is necessary is to meet, select a name, and elect a president, vice-president, secretary, and treasurer, and adopt the

rules and regulations of the American Medical Association and the code of ethics, and such by-laws as may be deemed necessary to govern the members of your society.

The boys at Paducah are going to put their shoulders to the wheel and do all that is in their power to make our visit pleasant and profitable. It should not be forgotten that while Paducah is in "the penny-royal" district that they grow mint down there, and that they send up to Nelson and Bourbon to get the other ingredient that is so essential to the make of that drink which is so delicious and dear to the heart of every Kentuckian. That the inner man will be cared for there can be no doubt, and the social features will be all that the most exacting could expect. It is hoped that the scientific features of the meeting will be equal or better than those of the past, and in order to be sure that you will be ready with your paper begin it now and let it have time to mellow, and when revised you will like it better, and so will your auditors.

Editors American Practitioner and News:

Please announce that the forty-seventh annual meeting of the Kentucky State Medical Society will be held in the city of Paducah, beginning on Wednesday, May 7th, and continuing through Thursday and Friday.

The Committee of Arrangements, of which Dr. Frank Boyd is Chairman, is determined that this session shall be the one to make "The Purchase" famous; the banner meeting in registrations, in scientific interest, in social solace, and in the addition of new members.

The Committee on Topics has completed its work by selecting subjects for special discussion which are of the highest practical importance, and the agreed writers, gentlemen of wide reputation, will discuss the various papers to which they have been assigned in the most pleasing and scientific way.

The Secretary is now waiting and willing to receive titles of voluntary papers. Members contemplating contributing to the programme should make the fact known at once, remembering that those who first come are first served, all things being equal.

The railroads will extend the usual courtesy—one and one third fare for the round trip. Paducah is now well supplied with good hotels, which promise most excellent creature comforts at a moderate cost. Now let us all pull together hard and strong, and success is bound to attend the Forty-seventh Annual. I am, as I shall ever be, yours truly,

STEELE BAILEY,
Secretary Kentucky State Medical Society.

Current Surgical and Medical Selections.

MOSQUITOES AND DISEASE.—The search for the pathogenic mosquito still goes on. Having fastened the responsibility for malaria upon this insect, the scientists seem bent upon fixing the blame for yellow fever upon it too. We trust we shall hear something more definite on that point at the coming Pan-American congress in Havana. The role of the anopheles in malaria seems to be well established, but we still need more definite information about the completion of the life-cycle of the malarial parasite. Is the mosquito the intermediary host, or is the essential link—"the means by which its existence is assured from year to year"—the individual known in the *Lancet* as "malarial man"? During the past year a few facts of importance—confirmatory rather than truly original—have been added to our knowledge of the propagation of malaria. Thus, Manson's experiment on himself was confirmatory. He submitted himself to be bitten by some imported anopheles mosquitoes, and promptly developed an attack of tertian fever. This was a disease that he could not readily have picked up in England, and the plain inference is that the imported insects gave it to him. Again, Drs. Sambon and Low, with Signor Terzi, betook themselves to the most infected spot on the Roman Campagna, and by protecting themselves from the bites of mosquitoes entirely avoided the disease. Other persons around them, who took no precautions, as promptly took it. The desideratum now is to find something that will kill the mosquito, and then having found it to apply it. It seems to us at present writing to be a bigger problem to exterminate the mosquito than it is to control malaria with quinine. We can kill the parasite in the blood of man more readily than in the system of the mosquito—or even than we can kill the mosquito itself. In other words, from an economic standpoint it may be a question whether it is not as easy to take malaria and cure it with quinine as it is to go on a still hunt after mosquitoes. This is a question in prophylaxis that has not much more than got itself stated. A solution of it is not yet in sight.—*Philadelphia Medical Journal*.

THE SURGICAL TREATMENT OF EPILEPSY.—The most interesting contribution to the surgical treatment of epilepsy has recently been made by Professor J. William White (*Philadelphia Medical Journal*). Although the new method described by him has been employed in only two cases, and he is not himself convinced of its value, the results have been so encouraging as to be worthy of the attention of every progressive surgeon. Professor White's new treatment is intended only for those cases in which a distinct motor center is involved, and its advantages are lessened risk of life and the possibility of a cure or amelioration without paralysis of important muscular groups. The description, as given by the author, is as follows: The affected center is, of course, determined in advance by the most care-

ful study and observation of the case. Its relation to the cranium is indicated by a silver or iodine mark upon the shaven scalp two days before the operation. The scalp is sterilized and resterilized three times at intervals of twelve hours, not only before the trephining, but also before each subsequent application of the treatment. A horse-shoe shaped flap is raised and a half-inch button of bone removed with a small trephine. The dura is left intact. Thirty minims of a sterile two-per-cent solution of eucaine is then injected into the brain substance at the center of the trephine opening, the point of the needle being introduced about three quarters of an inch. The needle is gradually withdrawn as the last ten minims of the solution are injected. The flap is replaced. The patient is returned to bed, and on the day of operation and the following day should receive full doses of bromides. At intervals, the proper length of which can only be determined by experience, the injection is repeated. The patient should be kept in bed at least four hours after each injection, and should take bromides for from one to two days.

SPREAD OF YELLOW FEVER.—Previous to the discovery of the fact that the mosquito is the means of conveying the virus of yellow fever, H. R. Carter collected considerable valuable evidence to show that several days must elapse after a house has been infected before another person will be able to contract the disease. In a number of instances it was distinctly proven that at least ten days must pass after a case of yellow fever has entered a house before the virus will become sufficiently developed to infect a second person, and a subsequent period of from three to six days will elapse before symptoms of the disease are manifested. The first period he calls "extrinsic incubation," and in the light of recent discoveries becomes easily explainable, for it is the time which must elapse from the infection of the mosquito by biting a yellow-fever patient to the time the mosquito becomes capable of communicating the disease to man. From this it follows that when a case of yellow fever develops in a clean house the inmates of this house who leave within a few days may be permitted to go without quarantine detention, for they will not develop yellow fever.—*Medical Record*.

THREE DANGEROUS OPERATIONS.—John B. Deaver (Philadelphia Medical Journal), refers to the repair of lacerated cervixes, the rapid dilatation or divulsion of the cervical canal, and curettement of the uterus. While these are excellent and beneficial procedures when performed intelligently, they are capable of much harm when done indiscriminately and without proper precautions.

Lacerated cervix is so common that without special indications it is better to let it alone. The indications for repair are: (1) Gaping of the edges of the tear and consequent exposure of the cervical mucous membrane; (2) ulceration; (3) a large amount of hard scar tissue; (4) subinvolution; (5) hereditary tendency to malignant growths. It is contraindicated in cases where salpingitis, pyosalpinx, or adhesions exist. The

breaking up of peri-uterine adhesions by bringing the uterus down to the vulvar orifice often liberates septic foci, giving rise to peritonitis.

The indications for curettement are retained foreign matter, usually post-puerperal, acute and chronic endometritis. The possibility of lighting up a latent salpingitis or sepsis must be borne in mind. Gonorrheal infection positively prohibits curettement. The amount of information to be gained from an examination of specimens obtained by curettement is not satisfactory, as the specimens are small and fragmentary. In advanced carcinoma, where radical operation is impossible, curettement followed by cauterization will lessen the patient's discomfort.

Dilatation of the cervical canal is ordinarily both inefficient and dangerous, and offers no advantages over divulsion. Where there is dysmenorrhea due to cervical stenosis and displacement of a non-adherent uterus, dilatation is indicated as a preliminary step to curettement. But this operation, as well as the two others, requires thorough antiseptic preparation; too often they are regarded as comparatively trivial and carelessness is permitted. Where these operations are demanded in the presence of adhesions or inflammatory conditions the operator must be prepared to correct such conditions by abdominal operation.

SCARLET FEVER.—In mild cases the treatment consists of rest in bed, liquid diet, plenty of water to allay thirst and promote elimination of the poison, and a mild cathartic, such as calomel. The free use of milk, butter-milk, water, and mineral waters lessens the danger of post-scarlatinal nephritis. For a mild diuretic, potassium acetate answers well and may be aided by the citrate or bicarbonate of potash or sweet spirits of nitre. The nose and throat should be cleaned by spray or syringe with a mild antiseptic, such as hydrogen peroxide. A gargle may lessen the danger of ear complications, and in addition the sore throat is improved by a teaspoonful every three hours of the following:

R	Tinct. ferri chloride,	gm. 8.0 (3ij);
	Glycerin,	30.0 (3j);
	Syr. simplicis, } aa.	90.0 (3iij).
	Aquæ, q. s. ad.,	

The temperature may be controlled by lukewarm or cold sponging, or, if the patient is nervous and restless, by acetanilid, phenacetin, or sodium salicylate. A weak heart may require strychnine, digitalis, or alcohol. If the kidneys become involved, give warm baths, saline cathartics, milk diet, and water with liquor potass. citrat. Keep up counter-irritation over kidneys with poultices and mustard, and promote diaphoresis by hot pack or vapor bath. Convulsions may be controlled by morphine, atropine, chloral hydrate, potassium bromide or chloroform. Urgent symptoms may demand hot mustard baths, with cold affusions or ice to the head, or even venesection. Morphine is the best remedy to control the pain of scarlatinal rheumatism, but sodium salicylate should be given, and the joint wrapped in a glycerin ointment.—*F. D. Millard, in Pediatrics.*

INTESTINAL OBSTRUCTION.—W. J. Walsham (British Medical Journal), in discussing intestinal obstruction, calls especial attention to a cause usually overlooked by most authors. It is the reduction of an old hernia, usually by the patient, occasionally by the physician, *en masse*, that is, sac with contents and all complete through the canal of exit into the body cavity. If the hernia is already strangulated of course the process goes on, to the surprise and discouragement of the attending doctor. If the hernia be simply incarcerated, strangulation will sooner or later appear, depending upon the usual accidental circumstances. The history going with this condition is a very painful, rather forcible, at first slow then very sudden reduction, beginning and continuing with the pain and ending with "a pop," but usually without cessation of the symptoms of strangulation. As a rule, just within the ring of the canal a tumor can be palpated and percussed which represents the hernial mass. The treatment consists of laparotomy and whatever management its findings indicate.—*Medical News*.

THE TREATMENT OF BURNS IN INFANCY AND CHILDHOOD.—In a paper in Pediatrics for March, Charles Warren Allen says that when more than one third of the cutaneous covering is involved in a severe burn the outlook is unfavorable. Aromatic spirits of ammonia is highly recommended to meet the indications of vital depression. Unless the child is too young for the drug to be used at all, opium in doses proportionate to the age may be employed until a quieting effect upon the system has been secured. Picric acid as a local application, in a one-per-cent watery solution, has the effect of giving almost immediate relief from pain, and healing takes place rapidly under its use. It is best not to remove the dressing next to the skin, but simply wet this with picric acid and apply your absorbent cotton over this. By not changing the inner layer of dressing the pain is greatly diminished and the danger of outside infection is greatly reduced. Iodoform is objectionable, both from its odor and the danger of iodoform dermatitis. A permanent bath offers one of the best means of securing comfort in the deeper and more extensive burns. For soothing purposes the old carron oil is the best known and the most extensively used. The most important point in the treatment of these conditions is to refrain from the removal of the dressing.—*The Charlotte Medical Journal*.

THE SALINE TREATMENT OF DYSENTERY.—(W. J. Buchanan, British Medical Journal). The author published, in a previous issue, a note on the results of the treatment of dysentery by salines in 555 cases, with only six deaths; 300 more cases have since come under his observation in the Central Prison, Bhagalpur, Bengal, making a total of 855 cases, with nine deaths. The results are better than those of the previous year. The average stay in the hospital was about eleven days, though many might have been discharged earlier if it had been thought best. There is little to add to his remarks previously made. He used, throughout the year, the following mixture: Sulphate of sodium, 1 drachm; aquæ fœniculi, ad. 1

ounce, given four, six, or eight times a day, each dose representing one drachm of the saline. No dose was repeated on the following day until the stools had been inspected. The treatment was continued until every trace of blood and mucus had disappeared, which was generally the case in two or three days. In some cases they returned in three or four days, necessitating repetition of the treatment. He advocates this method for acute cases only, and does not deem it safe with chronic or relapsing cases with ulceration of the colon. Considering the fact that the death-rate among the natives, from dysentery, is usually given as from 30 to 37 per cent, its reduction to about 1 per cent is certainly a favorable showing.—*Journal American Medical Association.*

FORMALDEHYDE IN SUPPURATIVE OTITIS MEDIA.—Dr. H. O. Reik (Maryland Medical Monthly) cites thirty-one cases of chronic otorrhea to show that formaldehyde will cure those cases which are susceptible of cure by syringing with an antiseptic solution in a much shorter time and with more certainty than the solutions usually employed. He says that the advantages which formaldehyde has over boracic acid and bichloride are (a) its bacterial power compares favorably with that of bichloride or any other agent; (b) it can be entrusted to any patient with safety; (c) it has great rapidity of action, and also a stimulating effect upon the local tissues.

As to the manner of using formaldehyde, it is most satisfactory to use one drachm of the commercial solution of formaldehyde (40 per cent) in one pint of boiled water, and to direct that the ear be syringed twice daily, using at least a pint of the mixture at each sitting. This is equivalent to a 1:300 solution of the formaldehyde gas. Stinging sensations usually follow its use, but the amount of discomfort is slight and lasts only a few moments. In sensitive ears a weaker solution can be used.—*Medical Review of Reviews.*

RESULTS OF OPERATION FOR VARICOSE VEINS.—Dr. Blake (Medical and Surgical Reports of the Boston City Hospital) comes to the following conclusions:

1. Operation for radical cure of varicose veins by dissection is not successful in every case.

2. To obtain successful results cases must be selected, and certain conditions avoided and recommended to palliative treatment.

3. The conditions which will probably militate fatally against satisfactory results are: (a) Old age, or an extremely debilitated condition; (b) excessive and very extensive varicosity; (c) occupations which to an extraordinary degree favor the development of varicose veins.

4. Cases which may be cured by a thorough and careful operation are: (a) Local varix, even of marked prominence, particularly if thrombosis has occurred either in thigh or lower leg; (b) extensive varix, limited to a single venous stem; (c) varicosities which are a bar to passing civil service, military, or naval examinations; (d) cases in youth and middle life; (e) cases

in which the development of permanent varicosity was at least partially due to more or less removable conditions (flatfoot, garters, etc.).

5. Operation, even if not entirely successful, will usually relieve such complications as thrombosis, hemorrhage, and ulceration.

6. The usual conditions which follow unsuccessful operation are: (a) Pain in and around the scar; (b) general swelling and tenderness of the leg; (c) development of varicosities above or below the operation scar, but not at the site of the operation itself.

7. In all operated cases general systemic treatment as well as local treatment should be prescribed, together with exercise and the avoidance of a continued upright position whenever possible.

8. Cure of symptoms does not necessarily mean the removal of all visible varicosities.

Comparison of relative methods of multiple ligation and continuous dissection must be based upon a larger number of cases than are here recorded.—*Ibid.*

RESULTS OBTAINABLE IN THE TREATMENT OF DENSE, TIGHT, DEEPLY-LYING STRICTURES OF THE URETHRA.—L. S. Pilcher (*Annals of Surgery*). In cases of retention due to a deep stricture, prolonged efforts are not made to secure the passage of instruments. If a No. 2 or No. 3 French olive-pointed bougie does not pass readily, the bladder is aspirated and preparation made for urethrotomy, usually without a guide. A free incision is made in the perineum, and if the urethra is found to be a distorted, hardened mass of cicatricial tissue, from one half to three quarters of an inch may be excised and the divided ends brought together. In the majority of the cases the urethra is split along its floor and a gorget introduced into the bladder, followed by the introduction of the finger. The first joint of the index finger corresponds to about a No. 60 sound of the French scale, and dilatation short of this is not advisable. The meatus and penile urethra is cut until it admits a No. 40 sound, and a sound of that size is passed through the entire urethra into the bladder. A rubber tube of about the same size is passed through the perineal wound into the bladder and held in place by sutures passed through the sides of the wound. A packing of iodoform gauze is placed around the tube. After four days the tube is removed; sounds Nos. 36, 38, and 40 are passed in succession. The tube is not replaced, and the sounds are passed every third day for two weeks, then once a week, then at rapidly-increasing intervals—once a month, once in six months, once in twelve months. There is no theoretical reason why these old strictures should not be cured permanently, as overstretched scar tissue, as seen in ventral hernia, has no tendency to contract. Some cases which have been followed for several years show that the cure has been perfect.

A high tribute is paid to the late Fessenden N. Otis, who, without question, has pointed out the way whereby in the management of the worst forms of urethral strictures a full *restitutio ad integrum* may be secured in many instances.—*Georgia Journal of Medicine and Surgery.*

TENDON TRANSPLANTATION IN MUSCULO-SPIRAL PARALYSIS.—Von Biste records the case of a youth, aged twenty, who was stabbed in the left forearm, the extensor muscles and the posterior interosseous nerve being divided. He was unable to dorsiflex or supinate the hand, or to extend the fingers or thumb. An attempt was made to find the divided ends of the nerve, but it was not successful. All the muscles supplied by the posterior interosseous nerve were paralyzed, and did not react to faradic or galvanic stimulation. The following operation was performed: An incision was made above the ulnar styloid process, the flexor carpi ulnaris was exposed and divided close to its insertion. An oblique incision was made at the junction of the middle and lower thirds of the forearm, exposing the extensor communis digitorum. The flexor carpi ulnaris was then drawn underneath the extensor of the same name, and stitched to the extensor digitorum in the angle between the tendons of the third and fourth fingers. The wound suppurated and healed by second intention, but after the use of the battery and massage the movements of the fingers improved very considerably. At a second operation, the tendon of the flexor carpi radialis was drawn beneath the tendons of the extensor ossis metacarpi and primi internodii pollicis, and stitched to the tendon of the secundi internodii. The wound again suppurated, but in spite of this he recovered the power of extending the thumb, and six weeks later he was able to perform all the manipulations required in his occupation of engine fitter.—*Centralbl. f. Chir., Leipzig.*

ABSCESS OF THE LIVER IN CHILDREN.—The following are the conclusions arrived at by Oddo, writing on the subject of abscess of the liver in children: (1) Abscess of the liver is a rare condition in children, except as the result of injury, but traumatic abscess is relatively more common in them than in adults. (2) This relative frequency is probably due to the occurrence of blows or injuries on the abdomen, to which children are more subject than adults. (3) Sometimes the abscess develops immediately after the injury, while at other times a latent period intervenes, during which time the symptoms are in abeyance. (4) Generally the injury has been applied directly over the hepatic region, in which case the abscess is primary. Occasionally an abscess of the liver results from an injury to some other part of the abdomen, when the resulting abscess is secondary or indirect. (5) The symptoms of a traumatic abscess of the liver are local pain, swelling, and fluctuation; at the same time there is fever, either remittent or continuous, and rapid and profound cachexia in every case. (6) The natural tendency of the liver abscess is to rupture, either through the skin or through the respiratory passages. In the latter case the abscess discharges either through the bronchi or into the pleura, setting up a purulent pleurisy or a pyopneumothorax. (7) The evacuation is followed generally by a rapid amelioration of the symptoms, but in every case surgical intervention brings about a more certain and rapid cure of the condition.—*Rev. mens. d. mal. de l'Enf., Paris.*

THE TREATMENT OF INOPERABLE SARCOMA.—The results so far achieved by Dr. Coley and others in the treatment of inoperable sarcoma with the mixed toxins of erysipelas and bacillus prodigiosus might nearly have been deemed unimportant were it not for the fact that they deal with cases previously so utterly hopeless that every brand snatched from the burning constitutes here nothing less than a triumph. Dr. Coley has again taken up the subject in an essay read before the American Surgical Association, at Baltimore, last May. He is unable to suggest any improvements in the methods advised seven or eight years ago, but neither have his conclusions changed. The important fact remains that about fifty per cent of cases of inoperable spindle-celled sarcomas can be thus cured, while the proportion is considerably less in the other varieties of this form of neoplasm, and in carcinoma the results are practically nil, only a few cases having shown temporary improvement. The duration of the cures obtained is certainly most encouraging. In a certain proportion of the cases the tumor dwindled to so small a size as to readily allow a complete excision. One case only recurred after eight years, another after more than three, while a boy was living and in good health after seven and a half years, and a woman is now well after nearly eight years. In all he is able to report sixteen cases that have remained well from three to eight and a half years. In eight cases the tumor disappeared entirely.

In the present state of science we must agree with Dr. Coley in the statement that the action of the toxins can be explained only upon the theory that malignant tumors are the result of some infectious micro-organism, and we venture to add that the results obtained by him give support to the idea that more efficient means of cure will in time be discovered.—*International Journal of Surgery.*

THE CYSTOSCOPE IN THE DIAGNOSIS OF DISEASES OF THE GENITO-URINARY TRACT.—The introduction of the cystoscope has been quite an advancement and help in the diagnosis of bladder and kidney diseases. J. W. Handly, according to the Southern Practitioner, says:

Since its introduction by Nitze in 1887, this delicate little instrument, by its kindly light, has aided in opening dark avenues and obscure recesses hitherto impossible to the genito-urinary surgeon, for lack of a clear insight into the affected parts; and so cleared and illuminated the way that where we formerly dwelt in doubt now we can feel the strong arm of certainty; where our treatment was once expectant and often inappropriately applied, now the most radical measures can be adopted with a feeling of security that we are treating the exact organs affected, and not erroneously the one or the other, as heretofore our custom.

Some of the essentials necessary for intelligently using this instrument are: First, that the urethral caliber be of sufficient size to admit it without injury to the urethra so as to cause bleeding. The caliber must be from twenty-two to twenty-four millimeters in size, and its course must be

straight. Second, the bladder must have the capacity of four to five ounces. Third, the fluid contained must be transparent, and remain so during the examination. Any deviation from the above essentials will obscure our examination, and necessitate bringing into requisition sounds and solutions to aid in obtaining the above.

Now as to some of the diseases of the bladder, ureters and kidneys, the diagnosis of which may be cleared by the aid of the cystoscope, we find central prostatic hypertrophy, carcinoma of prostate and bladder, vesical ulceration, vesical tumor, vesical calculus, free or encysted—cystitis, gonorrheal, tubercular or prostatic; inflammation around the ureteral orifices, ureteral calculi, sequel to nephrolithiasis, pyelitis or pyelonephritis.—*The Charlotte Medical Journal.*

THE RESULTS OF PRIMARY VERSUS SECONDARY NERVE SUTURE.—At a recent discussion on this subject before the Surgical Society of Paris, Reynier maintained that the regeneration of a divided nerve and the restoration of sensory and motor functions is greatly influenced by the length of time which intervenes between the division of the nerve and the suture of the cut ends. When there is an interval of several hours or days, the restoration of motor functions does not take place until six months or a year have elapsed, but when the suture follows immediately on the division of the nerve there may be an absence of any trophic, sensory, or motor paralysis. In two cases in which he divided the external popliteal nerve in the course of excising the head of the fibula, the immediate suture of the cut ends was followed by complete restoration of function. The abstractor had a similar experience; the ulnar nerve was accidentally divided in performing an excision of the elbow-joint for advanced tuberculous disease; the cut ends of the nerve were brought into apposition with catgut sutures, and when the dressings were removed a fortnight later there was no indication of any paralysis. Reynier's observations were not supported by the other surgeons who took part in the discussion, nor have they been confirmed by experiments on animals.—*Rev. de Chir., Paris.*

RENAL TUBERCULOSIS.—H. M. Kinghorn (Montreal Medical Journal) finds that the general symptoms are often lacking at the onset, but later there may be loss of appetite and weight, perhaps some night-sweats, and especially fever, with evening rise. Polyuria is one of the first indications, and frequency of micturition, equally marked at night, is suspicious. At any time there may be a brisk emission of considerable pus, or blood in clots or streaks may appear. Blood not clotted is intimately mixed with the urine, and the hematuris may be intermittent, lasting for a few days at a time. The bacilli are differentiated with such difficulty from the smegma bacillus, even with acid alcohol, that guinea-pig inoculation is the method of choice for diagnosis. The stain used in Trudeau's laboratory is carbol-fuchsin, which when washed and dried is decolorized with twenty-five-per

cent nitric acid, washed and dried, and placed for two minutes in ninety-five-per-cent alcohol. Tumor in the kidney region is a late symptom, but should be looked for. Pain depends on involvement of pelvis or ureter, though if the kidney parenchyma is involved alone there may be a dragging sensation. As a rule the pain is uninfluenced by motion, but is quieted by the dorsal decubitis. It may be aggravated by meals, or a blow or cold, but chiefly before the monthly period. It may be sharp, simulating stone, possibly from the excretion of purulent lumps or phosphatic concretions, or from renal congestion.—*Medical News.*

THE BACTERICIDAL PROPERTIES OF UROTROPIN.—Orlowski finds that the bactericidal powers of urotropin toward the majority of bacteria are distinctly inferior to those of carbolic acid or of corrosive sublimate, and are further diminished in the presence of albumen. It has, however, a very decided influence in restraining the fermentation of urine, much more powerful than that of salol. When administered internally, the acid reaction of the urine is increased, and in cases of cystitis with alkaline urine the reaction may become neutral. Its administration is not attended with any undesirable accompaniments.—*Centralbl. f. Chir., Leipzig.*

SYMPHYSEOTOMY AS CONTRASTED WITH CESAREAN SECTION.—Charles Jewett believes that, within a limited range of pelvic contraction, symphyseotomy is still a useful operation. It is suited to conditions in which only very little additional space is required. It is a valuable resource in cases in which forceps unexpectedly prove inadequate. Axis-traction forceps with the aid of posture should be tried before resorting to symphyseotomy. Its results would be much improved by restricting it to pelves with a conjugate of not less than 7.5 centimetres in simple flatness or 9 centimetres in general contraction. Under equally favorable conditions its total mortality should be no greater than that of Cesarean section. When the pelvic space permits, it should replace the Cesarean operation in the presence of exhaustion. It may be elected primarily as an alternative of Cesarean section when the operator can be assured that the degree of obstruction is well within its safe limit. Within its proper field symphyseotomy is better than Cesarean section for an operator of little experience in abdominal surgery.—*American Journal of Obstetrics.*

REMOVAL OF THE ENTIRE STOMACH FOR CANCER.—Von Bardeleben records the case of a woman, aged fifty-two, in which he performed the above operation in August of last year. In dealing with the cardiac end, the esophagus was pulled down as far as possible, ligatured and cut across; the entire stomach, along with the diseased glands along its curvatures, was removed, and the gullet and duodenum were then closed by means of a double row of sutures. The highest loop of the jejunum was then drawn upward, and was anastomosed by means of sutures to the esophagus at a distance of fourteen inches from the duodeno-jejunal junction. The patient was fed by the mouth on the evening of the operation, and has subsequently gained thirty-seven pounds in weight.—*Deutsche med. Wchnschr.*

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

TREATMENT OF TUBERCULOSIS OF TESTICLE AND EPIDIDYMIS.*

BY IRVIN ABELL, M. D.

Assistant to the Chairs of Anatomy and Clinical Surgery, Demonstrator of Genito-Urinary Surgery, Louisville Medical College; Lecturer on Surgery, City Hospital Training School; Visiting Surgeon to Louisville City Hospital.

Tubercular infection of the male genito-urinary tract constitutes one of the most frequent infections of this part with which we have to deal, probably second only to gonorrhea, and a review of the literature, particularly that pertaining to the testicle and epididymis, reveals such widely discrepant views and such conflicting experiences that I thought the subject might not be an uninteresting one for our consideration this evening.

Turning for a moment to the pathology, a knowledge of which is absolutely essential for the application of correct treatment, we are impressed with the diversity of views upon several points connected therewith, expressed by men whose prominence command respect for their opinion. That the process in the testicle is ever primary is denied by most writers, others regarding it as of such rare occurrence as to pass it with a simple mention. That the process in the epididymis is often primary we find asserted by such men as Senn, Councilman, Reclus, Murphy, Saleron, and other investigators, while Virchow, Köenig, and Kocher have always held that the infection is a descending one.

Councilman states his belief that the most common seat of primary uro-genital tuberculosis is the epididymis as follows: "It may be confined to this, or the testicle affected by continuity. The epididymis is

* Read before the Louisville Clinical Society, February 25, 1902. For discussion see p. 256.

converted into a more or less firm, caseous mass. From this the disease extends along the vas deferens, which becomes enlarged, and on section the interior is found to be lined with a whitish caseous tissue. In both the vas deferens and the epididymis the seat of the disease is primarily the epithelium, and later takes the form of a tubercular inflammation. Seminal vesicles on the same side become affected in most cases, or they may be passed by and the disease appear in the prostate or bladder."

²Fuller says: "It is rare for the tubercular deposit in the epididymis to represent a primary focus of the disease, as in a vast majority of cases the inflammation has extended to the part along the genital tract from the deep urethra or seminal vesicle. In many instances I have watched the process of extension, having detected the tubercular involvement of the deep urethra or seminal vesicle long before the disease had extended itself into the epididymis." In which belief Guyon and Lancereaux concur.

The points of entrance of the bacilli are conceded by all to be the skin, respiratory, gastro-intestinal, and genito-urinary tracts, the localization in the epididymis then depending on one or more of several conditions. The most potent source of tubercle bacilli in the blood is believed to be the mediastinal lymph glands, which have been shown to be tubercular in 75 per cent of cases coming to the post-mortem table. The situation of the primary nodule has been and is the subject of dispute. Reclus and Malassez locate it in the wall of the seminal tubule; Virchow, Gaule, and Steiner in the intercanalicular connective tissue; while Langhans, Curling, and others locate it in the interior of the tubule itself. ³Reclus was able to remove the nodules when he resected portions of the seminal ducts, thus showing their connection with the ducts. He believes the process to originate in the endothelial envelopes of the tubules, the lumen being secondarily affected.

Murphy, in a recent article, supports the view of Virchow and others by saying: "As in the majority of cases the infection probably takes place through the blood-current, it seems reasonable to suppose that the primary lodgment of the bacilli is in the intertubular connective tissue of the epididymis, and this view is certainly supported by studies of tuberculosis in other organs."

Curling, in his work on diseases of the testes, expresses the opinion that the point of origin is in the interior of the tubule, and continuing says: "Anatomic considerations, indeed, support the opinion that abnor-

mal nutrition in the cellular contents of the tubes induces the formation of miliary tubercles in the walls without at all negating the development of tubercle in the intertubular tissue, as seen by Virchow, or in the adventitia of the blood-vessels, as observed by Nepveau. Indeed, the discrepant views upon the matter may be explained by assuming that different observers have regarded what has been found in particular cases as the result of some general law. With reference to this the suggestion of Klebs is valuable. Admitting that in acute miliary tuberculosis, where the dissemination of the virus is effected by the vascular system, the blood-vessels and their surroundings are the seat of tubercles, he has seen preparations from Langhans where the tubercles were in the interior of the tubules, and Klebs adds that 'it would be very desirable to ascertain whether this was uniformly the case in the so-frequent extension of tuberculosis from the older nodules in the epididymis to the testes.' "

But let the starting be at either of the three mentioned places, the tubercular process itself does not differ here from tubercular processes elsewhere, but consists of deposit, caseation, and liquefaction, calcification being rarely observed. The tunica vaginalis usually shows evidence of chronic trouble, is unnaturally vascular, its cavity wholly or partially obliterated, or may contain fluid which may be serous, sero-purulent, or pus, tubercle bacilli having been found in all three varieties. Simon examined twelve tubercular testicles and found evidence of involvement in eight. 'M. Tuffier found that the liquid of hydroceles present in three cases of tubercular testes injected into the cavities of animals produced fatal tuberculosis, although no tubercle bacilli could be demonstrated in the fluid. The vas deferens is very commonly involved, becoming hard, knotty, and thickened, rendering it more or less irregular with nodules. The lesions are found particularly near the testicle and near the seminal vesicle. The involvement of the testicle is nearly always secondary to that of the epididymis; the epididymis is most frequently attacked in the globus major, although the observations of some few have been that the globus minor is first affected. Jacobson suggests that those cases in which the globus major is first affected are the primary ones, as the spot of involvement usually corresponds to the entrance of the branch of the spermatic artery, while those in which the tail is attacked first are secondary to other uro-genital lesions, the infection descending from the urethra or seminal vesicles through the vas deferens. Murphy, in the November

Practical Medicine Series, says: "Baumgarten experimented on rabbits to determine the manner in which uro-genital tuberculosis is disseminated. Inoculation of the urethra never produced a tuberculosis of the testicle, but always developed a tuberculous ulcer of the posterior urethra, and often of the fundus of the bladder and the prostate; it never extended along the ureter to the kidney. If, however, the epididymis was inoculated, tuberculosis of the vas and prostate of same side always resulted; it never spread to the opposite side. The results of these experiments are in harmony with the rule pertaining to all cases of experimental tuberculosis: tubercle bacilli never spread in a direction opposite to the current (against the stream), whether it be blood, lymph, or a secretion stream. The explanation of this is found in the fact that tubercle bacilli are non-motile and do not multiply in normal secretions. To infect, these bacilli must enter the channel wall; from here, through ulceration of the channel wall, they again reach the secretion, thus spreading the infection only in the direction of its flow. The infection is also disseminated by the lymph vessels within the wall, but this lymphogenous infection is also carried from the epididymis along the vas to the seminal vesicles and prostate. The results of these experiments agree with the findings in autopsies. The conditions for the spread of the tuberculous process are the same in man as in the rabbit, because the anatomic relations are essentially the same. He confirms the opinion of Von Brun, that tuberculosis of the testicle is the only localization possible in the uro-genital tract; and this view is sustained by the conformity in results obtained by clinical experience, pathologic investigation, and experimental research."

After noting how widely divided the profession appears to be in regard to the pathology and dissemination of the tubercular process here, we are not unprepared for the various radical and conservative measures advocated for its relief; among the advocates of the radical operation (castration) are Kocher, Von Bruns, Simon, and others.

⁵Young quotes Köenig's report of Kocher's forty five cases as follows: "Kocher does not favor the partial operation, and in this series has performed only three epididymectomies to thirty-seven castrations. Among the forty-five cases there are nine deaths and nine could not be followed. Twenty-seven cases have been carefully examined after periods varying from two to nine years. Of these twenty-seven cases there have been twenty-two cures of both local and distant tuberculous,

four with marked improvement of the prostatic, vesical or general condition, and only one unimproved. In only fourteen of the forty-five cases were the prostate and seminal vesicles found uninvolved; of the other thirty-one the bladder (or kidney) was involved in eleven, the lungs, bones, or glands in five, and in one previous history of bladder disease. Of the thirty-one in which prostate or vesicles were involved, one testicle was involved in seventeen, and both in fourteen cases. After operation the vas deferens was found healthy in but three cases. Of the seventeen cases with the prostate and one testicle diseased, thirteen were followed by complete cures, one improvement, and three deaths. In thirteen cases where both testicles were involved, besides the prostate, nine were cured, two improved, and two died. Of the thirty-three cases operated which did not have tuberculosis outside of the genital tract before operation, of whom twenty-eight were followed, with twenty-two cures, four marked improvements, one unimproved, and one death four years after operation. The lungs were involved six times, with two cures and four deaths, and the higher urinary tract eight times, with four deaths, two cures, one improved, and one not followed."

⁶Von Bruns reports from the records of the Tübingen clinic one hundred and eleven cases, of which seventy-three were single and thirty-eight double castrations; the testes were involved in 24 per cent of the cases operated within three months of the beginning of disease, in 40 per cent within six months, and 60 per cent after six months. Twelve per cent of the unilateral castrates died from uro-genital tuberculosis; this includes almost all cases in which the disease had extended to the urinary organs at time of operation; 15 per cent of them died from tuberculosis of other organs, and 46 per cent of them were permanently cured, the latter under observation from three to thirty-four years. Of the bilateral castrates, 15 per cent died of uro-genital tuberculosis, 25 per cent died of tuberculosis of other organs, and 56 per cent were permanently cured; observation period three to thirty years. Of all cases, more than one half were permanently cured; nearly all of these were cases of genital tuberculosis, the deaths including almost all cases in which the urinary organs were involved, and most of these with tuberculosis of other organs.

⁷Simon reports one hundred and seven cases from the records of the Heidelberg clinic, of which the results are known in ninety-two. Of these, fifty-nine are alive and thirty-three dead; of the dead, twenty-six

died from tuberculosis. In the twenty-six cases there was marked improvement in the pulmonary tuberculosis. Reports were obtained from twenty-nine of the thirty-four double castrations: eight died and twenty one remained well; ⁸in only one case was there any marked psychic disturbance; five showed decrease in sexual desire, while in all others there occurred not the least impairment in sexual power or desire, even when the observation had lasted twenty years after castration. At present fifty-four are free from tuberculosis, seven others who had been free from tuberculosis for years died of intercurrent disease, so that 66 per cent were permanently cured. The advocates of both radical and conservative methods are agreed upon a high resection of the cord; Von Büngner and others accomplish this by slow, steady traction on the vas, being able to remove four fifths of it in this way before it tears, and Von Büngner claims that neither infection of peritoneum nor serious hemorrhage ever follows. ⁹Lauenstein reports twelve high resections after this method, in three of which he had marked hemorrhage, in one to such an extent that the clot produced temporary blocking of ureters. ¹⁰Helferich reports a similar experience. Villeneuve and others accomplish the high resection by means of an inguinal incision, opening the canal and removing the vas under the direction of the eye.

Verneuil and Kœing may be classed as ultra-conservative, since both are averse to castration or epididymectomy with high resection of vas on account of the so frequent co-existence of other tubercular lesions of the genital tract, contenting themselves with hygienic treatment alone or combined with excision or curettement of tuberculous foci of epididymis and testicle.

The advocates of the conservative operation, *i. e.*, epididymectomy with high resection of vas, urge in support of their view the importance of preserving the internal secretion of the testicle, the avoidance of the psychic disturbances occasioned by castration, the preservation of the sexual appetite and power, and finally that this operation is as curative as castration, while lacking in its disagreeable features. Murphy, in a recent brochure upon this subject, advocates this method, and reports a number of cases, followed for several years after operation, which showed complete recovery. ¹¹Dimitresco reports twenty-six cases of epididymectomy, thirteen of which were under observation from one to nine years; of these thirteen, eleven recovered both locally and generally, seven having been unilateral and

four bilateral operations. In none of the cases was there any dissemination of tuberculosis following operation, and in only one did it make its appearance in the remaining testicle. ¹²Bardenheuer reports thirty-four cases of double epididymectomy in which the results were uniformly satisfactory, the testicle remaining normal in size, consistency, and in its function of producing spermatozoa, even though the outlet for same was destroyed. This in itself would indicate the double rôle played by the testicle, since when the excretory duct of a purely excretory gland is obliterated atrophy follows; this, however, does not obtain in the testicle when the epididymis is removed after the method of Bardenheuer, *i. e.*, subserous dissection except of globus major, with the preservation of testicular branches of spermatic artery.

One of the most remarkable results of both castration and epididymectomy is the disappearance of tubercular foci at points other than that operated, not only in the genital tract but even distant lesions; the suggestion has been offered that this was due to the raising of vitality consequent upon removal of foci from which toxins were constantly being absorbed.

Kocher is of the opinion that castration is more apt to be followed by a decline of prostatic tuberculosis than is epididymectomy; various French writers deny this, and, as Young remarks, "as each has used the method he favors to the exclusion of all others the statement is robbed of much of its force." Abundant clinical evidence, however, seems to prove conclusively that not only is there a distinct retrogression but oftentimes even complete cure of prostatic tuberculosis following both operations. This has been noted in many instances where a typical castration without high resection of the vas was made, but the recurrence, or rather the extension of the disease to the remaining testicle, so often noted after this operation, and also seen where the high resection is done, would indicate that too much of the vas can not be removed. The very rapid subsidence of bladder symptoms following either operation would indicate that these symptoms were not referable to a distinct tuberculosis of bladder, prostate, or urethra, but to a catarrhal condition of same due to the passage through them of pathological products derived from the testicular tuberculosis.

In conclusion, the following deductions are presented:

1. That the epididymis is the most frequent starting point of urogenital tuberculosis.
2. That it is usually secondary to some other focus, but may be a primary deposition.

3. That the testicle is rarely primarily affected, but as a rule secondarily so from the epididymis.

4. That when the epididymis is primarily infected through the blood-supply the process is probably an intertubular one.

5. That when secondary to other foci of uro genital tract, constituting a descending infection, the process is probably intratubular.

6. That foci in other portions of the genital tract, or even distant lesions, do not necessarily contraindicate operation, since abundant clinical evidence proves that, when operated early, foci in genital tract recover as a rule, and healing of distant lesions following operation has been noted in a sufficient number of instances to invite further investigation.

7. That castration should be limited to those cases in which the process has invaded the testicle proper.

8. That epididymectomy with high resection of cord after the method of Villeneuve is to be practiced in all other cases.

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LOUISVILLE.

ORGANIC STRICTURE OF THE URETHRA, WITH SUPPLEMENTAL TREATMENT.*

BY HENRY ORENDORF, M. D.

Professor of Therapeutics, Genito-Urinary, Venereal, and Skin Diseases in the Kentucky School of Medicine.

The subject of urethral stricture is of a nature so extensive that only a part of it can be taken up for discussion this evening. Therefore, the subject is "Organic Stricture of the Urethra." The object of this paper has two points in its conception: First, in the meeting of this Society to fill in a gap, and second, to emphasize two thoughts in the subject-matter to be read. Organic stricture of the urethra is due to a deposit upon and within the urethral walls. The deposit is caused by the usual results of an inflammatory process; the deposit is not absorbed, but remains to become an organized exudate, a pathological factor in an important outlet of the body. The deposit gradually assumes control of that part of the canal, infiltrating and contracting it until its resiliency is badly impaired. The deposit is increased in amount produced by the friction of the urinary stream.

Since the deposit interferes with the physiological actions of the urethral tube and its surroundings, it should be removed. And since it is obvious that its removal is for the purpose of restoring the canal to its usual dimensions and usage, it should be done. The removal of the deposit is accomplished by that process known as absorption. In order that absorption may be effective, disintegration of the deposit is instituted and completed by that process known as division and dilatation. Since by division and dilatation the full circumference of the urethral wall is gradually reached, the desired absorption is attained. In order that a complete dilatation may be done and made effective, a hair-line incision is made through the mass of deposit, that the dilator may effectually distend the urethral wall to its full capacity.

The action of the dilator is to be repeated as often as may be needed, until the deposit is absorbed and the urethra, with the adjacent structures, are restored to their normal power and function. Therefore, the objects to be obtained in such conditions is, that by the application of the measures mentioned the complete absorption of the deposit and free drainage of the urethral channel is secured. In such an event adjacent organs are spared the secondary effects placed upon them by a contracted and badly drained canal.

* Read before The Kentucky School and Hospital Medical Society, February 27, 1902.
For discussion, see p. 270.

Moreover, the effect upon more distant organs, the general systemic disturbances that occur when these deposits are allowed to remain, or unsatisfactory means are instituted for relief, should have more careful consideration than is usually allotted to the subject.

The special points for emphasis, then, in this paper are absorption and drainage. By division and dilatation absorption is secured, and through absorption drainage is perfected. Supplemental to the organic stricture of the urethra, then, is often a complication present caused by a condition known as an infection. Indeed, an infection is the most prominent factor in the production of that product known as a deposit.

The existing infection is irritative and inflammatory, and is productive of those ingredients that persist in maintaining and increasing the size of the deposit. With the organized deposit present, there is behind it a process going on known as liquefaction of tissue, producing and continuing that condition known as a discharge. If the discharge is allowed to remain there will be other foci of static infection, with the building up of other organized deposits, until not only the anterior urethra but the posterior, prostate, and bladder may become involved in the infective and inflammatory process.

To relieve this state of affairs, irrigations are to be regularly instituted until the process becomes subacute—until all active inflammation has subsided. Then the same process is to be gone through with, namely, division and dilatation, followed by irrigation. By dilatation the urethral wall is put upon the stretch, and its contents expressed upon its surface, that the foci of infection so expressed may gradually melt down and be washed out by the irrigating process, assisted by the urinary stream more or less saturated with santali oleum.

All crypts, follicles, and hiding places for the infective agents are in this way brought to the surface walls of the canal and disposed of by thorough irrigation after each and every dilatation. Therefore, by division, dilatation, expression, and irrigation all infective agents are gradually and effectively removed. The limit of the process is reached by the complete cessation of the discharge, which gradually declines and finally ceases. The dilator has four bars, which gives the urethra a more uniform and effective dilatation.

LOUISVILLE.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, February 25, 1902, the President, William H. Wathen, M. D.,
in the Chair.

Rheumatoid Arthritis Affecting the Temporo-maxillary Articulations.

Dr. Carl Weidner: I would like the privilege of directing your attention for a few minutes to this young lady, aged about eighteen years. I brought her here first as a matter of interest, and secondly for the purpose of asking the advice of the members as to the origin of the condition and what treatment should be applied.

She has some trouble with the articulation of the temporo-maxillary joints; subjectively she complains of pain on opening her mouth, interference with mastication, and interference with speech at times. Lately she had some dental work done, and the dentist could not do the work properly because she could not hold her mouth open sufficiently wide nor long enough at a time.

I have only seen the young lady twice at the office; she does not live in the city, and gives about the following history: Three years ago she ran a splinter into one of her toes, and at the time experienced some stiffness of the jaw and feared she was going to have lockjaw. Some physician used massage, and she says rather severe manipulation about the jaws at the time, and to this she ascribes her present trouble. She had apparently no signs of lockjaw, and probably this present trouble was existing then.

I find there is considerable crepitation on moving the jaw, such as found in rheumatoid arthritis. She opens her mouth with difficulty. Two weeks ago she had a great deal of pain, but this has improved under treatment. You will notice that she can open her mouth only partially, and it seems to cause distress. I would like for any of the members who care to do so to examine her and give me the benefit of their advice. Looking upon the trouble as possibly due to some rheumatoid constitutional condition, I put her upon salicylates for a while, which relieved the pain to a great extent. Following these, I gave her lithia water, salicylic acid, and iodide of potash, and also practiced massage of the jaws.

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

She gives a history of having had at various times slight muscular pains in different parts of the body, but no affection of the small joints of the fingers or toes. She has no fever, no sweats; heart normal. You will observe the grating can be plainly felt; the jaw appears to be freely movable, and seems to slip forward to a great extent. I have never seen her with a lateral displacement. There has been no improvement since I first saw her, except relief from pain.

Discussion. Dr. Irvin Abell: It seems there is evidently a deposit of some character in the joint, interfering with articulation. On opening the mouth the head of the inferior maxillary passes entirely forward. As far as surgical treatment is concerned, none is indicated, and Dr. Weidner's plan of treatment is all that can be done for the patient. The ultimate result is not very encouraging. Conditions of this kind occur in women three times to once in man.

Dr. T. P. Satterwhite: I would like to ask Dr. Weidner if he can explain the excessive tenderness or hyperesthesia of the upper part of the cervical column. When I took hold of the upper cervical vertebræ and moved them laterally it gave rise to a great deal of pain, and she said further that her neck often gets weary, but there is no decided pain. However, she exhibited considerable pain and discomfort when I moved the vertebræ laterally in my examination.

Dr. James B. Bullitt: The young lady seems certainly to have some interference with the articular surfaces of the jaw. Dr. Krim just called my attention to a fact which is of considerable interest, namely, when the girl opens her mouth wide and then closes it there is a tendency to thrusting forward of the lower jaw which is readily seen, this being dependent upon the fact that the articular heads of the maxillary do not readily slip back into the cavity. Apparently there is a lack of synovial fluid and some roughening of the surfaces. The point of greatest interest would be the exact nature of this condition. I believe Dr. Weidner has come to no definite conclusion himself, for the reason that definite conclusions in affections of this kind are somewhat difficult to arrive at. Most of us have some hazy ideas concerning affections of this kind, which are termed sometimes rheumatic, sometimes rheumatoid, and sometimes arthritis of various kinds. This girl does not seem to be in the stage of life when the so-called rheumatoid disease would be expected to be present, and it would be singular, certainly, if it were of this character, if other small joints of the body were

not affected. Without attempting to arrive at a positive diagnosis, I will say that I have seen one other case almost similar to this—crepitus not quite as marked and discomfort not quite as pronounced, pain quite marked—in a young girl about the same age, who went along with and without treatment for two years and then seemed to recover entirely, as she has complete use of the jaw now without any attending pain.

Dr. Carl Weidner: I thank the gentlemen for the interest taken in the case and the suggestions offered. I had not formed any definite opinion about the case, having seen the young lady but twice, and only transiently then. Pain in the neck I had not noticed. If it is present only on motion, it may be similar to the same which produces the lesion in the jaws, and would point more strongly still to a constitutional defect. Treatment has not been continued for a sufficient length of time to determine what the effect is really going to be.

I have previously seen two other cases of this kind. One was a young lady, a milliner, who was very much discouraged by being told by some physician that the condition was incurable. She had distinct crepitation, pain, etc., which lasted a few months and then entirely disappeared. I hope this will do the same.

Stricture of the Esophagus. Dr. H. N. Leavell: This patient, Mr. L., aged twenty-five years, a molder by trade, about eight months ago developed a stricture of the esophagus. He was under treatment some little time for this condition, and finally began the use of the esophageal bougie, using it at first about once a week. He did not get much benefit from this treatment, and about two weeks ago came to me suffering so much that it was impossible for him to swallow even liquid food, and he had not been able to swallow for thirty-six hours. He brought with him his set of esophageal bougies, evidently thinking they would be needed, and prior to a trial of the stomach-tube I asked him to pass the large-size bougie, which he did without very much difficulty. After having done this I was then enabled to use the stomach-tube, and introduced into the stomach one and a half pints of milk and one raw egg, and he went away rejoicing for one meal at any rate.

At that time, thinking it was probably largely neurotic, on account of the sudden onset of the inability to swallow food, I gave him solution of bromide of strontium and potassium and told him to take a tablespoonful of this half an hour before eating, and then

immediately before eating a meal to pass the large-size bougie. He followed these instructions and came back in two or three days feeling much improved, so much so that he was enabled to swallow his food without any difficulty, except very solid food, such as meats. He returned four or five days ago saying that he had still some little difficulty, and was complaining of some depression, which I attributed largely to the effect of the bromides. I did not try to use the stomach-tube at that time, but ordered him some tonic treatment, and on account of the fact that he complained of considerable gaseous distension of the bowels I gave him some medicine to act on his bowels at bedtime.

The point in regard to this case is whether or not this is an organic stricture or merely an esophagismus due to a neurotic temperament. He does not appear to be of a nervous temperament. On the other hand, he does not give any symptoms or any history of any condition which would predispose to an organic stricture. There is no specific or tuberculous history, and no evidence of his having swallowed any caustic or hot foods sufficient to cause a lesion there, resulting in organic stricture. The point of differential diagnosis is one of more importance to me than any thing else in regard to the prognosis in this case. You will see that he is now able to pass the largest-size bougie, which meets with some resistance both upon introduction and withdrawal, which he locates about midway between the pharynx and the stomach.

When he takes his medicine some of it seems to go down and the remainder passes into the stomach when he introduces the bougie. There was at first considerable constriction; so much so that I was unable to pass the stomach-tube prior to the use of the large-sized bougie. I have not been able to locate any aneurism or any encroachment upon the vagus nerve which might possibly give rise to a neurotic element in the case. In passing the stomach-tube, when it had gotten about half way down there appeared to be a great deal of resistance. Evidently he locates the stricture in the proper place.

Discussion. Dr. William Cheatham: It looks to me like the stricture in this case was due to spasm. It can not be paralysis. There is evidently a stricture with spasm, which is relieved by the bougie so he can swallow. I think a little cocaine or orthoform would do the same thing, and he would be able to swallow the same way.

This would be a good case in which to try the esophagoscope to determine the presence or absence of true stricture. I remember a

case which I saw with Dr. Grant, where a boy had swallowed a plum-seed and had not been able to swallow for some time. He had an esophageal stricture from having swallowed lye in childhood. He was given chloroform, the supposition being that the plum-stone was still in the esophagus; with the esophagoscope I easily determined the presence of stricture, and there was no foreign body present. In the case before us, the man is sufficiently young to be put in the exaggerated position necessary for proper use of the esophagoscope, and this would accurately determine the diagnosis.

Dr. Carl Weidner: I can not conceive that there can be a very marked constriction in this case, as he passes the large bougie with such readiness. I think the trouble must be a temporary constriction due to spastic contraction. When the patient swallows water no obstruction can be observed by listening in the back; the fluid appears to pass at once into the stomach.

Dr. George W. Griffiths: I have seen quite a number of cases of foreign bodies in the esophagus which produced a spasmodic contraction. In one case a girl swallowed a peach-stone, and we tried all the known methods of removal without success. After several months she passed the stone by the mouth. In the meantime she could eat only at certain intervals; she would say to her father at such times "that her throat was open, and she could then take some food." At other times she could not be fed with a stomach-tube or any thing else. She finally made a good recovery. Another case was a boy who swallowed a silver quarter, which remained in the esophagus two months or more. All our efforts at removal failed. In a fit of coughing one day he threw the coin up.

In the case before us I believe there is a little local thickening, which causes this spasmodic trouble. I am like Dr. Weidner; the facility with which the patient himself passes the bougie leads me to believe there can not possibly be any permanent trouble in the esophagus.

Dr. J. M. Krim: From the superficial examination I made of this patient I am led to believe that there is present purely a nervous condition. When he withdraws the bougie there appears to be produced a spasmodic condition. I do not believe there is an organic stricture.

Dr. James B. Bullitt: This patient is an expert bougie swallower, even if he can not swallow food. I am inclined to look upon the matter of organic stricture with some doubt. I think, however, it could be

easily and definitely determined by anesthetizing the patient and passing a bougie whether an organic stricture be present. That would, in my judgment, be the only way of positively determining the question.

Dr. H. N. Leavell: I agree with the suggestion made by Dr. Bullitt as to the advisability of anesthetizing this patient, but of course this would merely be a point in the diagnosis.

Cases are reported where after anesthesia these conditions have entirely disappeared. I remember seeing the record of a case in which a girl at the age of twelve years was bathing in a creek; some boys came along and began to jeer her; she became hysterical and developed evidences of stricture of the esophagus. The physician in attendance said he was going to cure her on a certain day at a certain hour; he suspended her by means of some apparatus, gave her something to swallow, and she had no further trouble; demonstrating, of course, the hysterical nature of some of these conditions, and the neurotic element which is present.

In regard to the use of the esophagoscope, I think it would be wise to have that used in this case should the patient have this difficulty much longer. If it continues to be necessary for him to use the bougie three times a day, and keeps that up for three or four weeks, without any marked improvement, I would advise, first, the use of the esophagoscope, and then, perhaps, anesthetize him, and use more forcible dilatation, with larger bougies than he has been in the habit of using.

Dr. T. P. Satterwhite: What effect would the passage of these bulbs have upon the constriction? We know there is more or less irritation caused by the passage of these bulbs; would this not, of itself, produce more or less thickening and induration of that spasmodic condition?

Dr. H. N. Leavell: I will answer Dr. Satterwhite's question by saying that this patient tried introducing the bougie once a week, for a considerable period, without any benefit, and since he has used it three times a day he says he does not experience any irritation, but on the contrary more relief, which it was impossible for him to obtain without the use of the bougie. In the last few days he has been able to eat solid foods, meat, etc.

The essay of the evening, "Tuberculosis of the Testicle and Epididymis," was read by Irvin Abell, M. D. [See page 241.]

Discussion. Dr. H. N. Leavell: I noticed some very marked improvement in a case of castration for tuberculosis of the testicle

which Dr. Blue operated upon about three years ago. The man gained thirty to forty pounds in weight within three months after the removal of the testicle.

The point of interest in regard to these cases is, of course, to determine just where the tuberculous process is liable to start, and whether or not the process in the testicle is not due to a general infection. And then, also, as this tuberculous process is transmitted by the lymph stream, as to how much good will be accomplished by castration, when we must realize that this tuberculous deposit will travel further upward. There can be no doubt that marked improvement is often noted in these cases after castration, and Dr. Abell has brought out facts sufficiently forcible to lead us to believe that castration or removal of the tuberculous deposit is certainly the rational thing to do. We get improvement in the same way after removal of lymph glands and nodes in tuberculous disease in other parts of the body.

One point in regard to the diagnosis of tuberculosis of the testicles and epididymis: We, of course, would expect to find a nodulated condition along the course of the tuberculous deposits, and we have to differentiate between this condition and the enlargements due to syphilis. In gummata, however, we would expect to find the nodulation more even in contour than we find in deposits of a tuberculous nature.

Dr. J. R. Wathen: I have operated upon several cases of tuberculosis of the testicle, and one case especially I would like to mention. The patient was a prominent physician in this city, who consulted me in regard to a tuberculous testicle on one side, with a sinus through the scrotum. He was troubled a great deal with frequent micturition, irritable prostate and bladder, and wished me to do an operation that was radical, at the same time not as extreme as advocated by such men as Fuller and others. I removed the testicle, ligating the cord high up, removing all fat from the scrotum, and a few weeks after the operation marked improvement was noted in the urinary symptoms. It is now about a year since the operation was performed, and the patient has entirely recovered; his bladder is as good as it ever was; there are no signs of tuberculosis anywhere else in his body, and in every respect I think he is a well man. The operation that I did was one that, while not as radical as some, was certainly far from being conservative.

I do not believe in the curetting of these tuberculous foci, or partial removal of such organs as the epididymes, or sections of the testicle, but I believe in complete removal of the testicle and all fatty tissue of the scrotum. The operation advocated by Fuller, Young, and others, of removing the vas deferens, seminal vesicles, etc., is too extreme. As long as we can get clinical results by less radical procedures I think we should indorse them.

In the case to which I have referred the chief symptom was irritability of the bladder. After taking a glass of beer, for instance, this patient would immediately have to urinate, and even without alcohol he was continually troubled with frequent micturition; the urine would occasionally show the presence of pus, indicating a tubercular cystitis. These symptoms have completely disappeared, and as far as I can see the patient is absolutely cured.

Dr. James B. Bullitt: There are several points that attract one's attention in connection with the paper, especially the statement made by one author, if I understood correctly, where in fourteen cases after bilateral castration the sexual appetite and ability remained normal. This seems a very unusual statement, and, I believe, is not in accord with the observation or evidence of most writers on this subject. In the second place, one is very much struck with the improvement in other tuberculous lesions which has been reached by treatment of lesions which were present and manifest in the testicles or epididymes, which is not remarkable, I take it, because we know that by improving the local condition in one part of the body which is a menace to the general health that the whole body will be improved in this way, and we find most lesions in other portions of the body will be expedited. It seems to be especially striking in this connection, more so than in most other lesions of this character which can be removed in toto in other parts of the body. Further than this, we are struck with the fact that both character of operators, both the conservatists and radicalists, seem to have had extremely good results in the treatment of these affections. I believe the man who resorted to castration, as complete removal as possible of the spermatic cord, at least has a larger percentage of cures to his credit than the others, the comparison being fifty-six to forty-four, which would seem to indicate that adopting these radical measures certainly makes the probability of radical cure somewhat greater. As against this comparatively small percentage is to be figured the greater danger to the patient from the initial

operation and the greater menace to his comfort and peace of mind possibly in after-life.

From my own limited experience I believe much good can be effected by some of the less radical procedures; that these tubercular foci, even not limited to the cord, may be resected, also portions of the testicle. This plan has succeeded once in my hands extremely well, the patient having been very much improved and having undergone exactly the same kind of a subsequent history as described by the essayist.

Dr. J. G. Sherrill: I had hoped Dr. Abell would touch upon the etiology, or I might say the contributing etiology; that is, whether trauma would have any effect in predisposing to the determination of this condition, or whether gonorrhea would be of any especial importance. My experience has led me to believe that trauma is a contributing cause, also that gonorrhea, especially an old gonorrhea which has caused epididymis, certainly leaves a ground which will favor a later invasion of the tubercle bacillus.

A case recently came under my observation, a man about forty years of age, who had been injured two years previously while working on a ladder, bruising his testis, which had been followed in a few weeks by infection and suppuration, with the formation of a small abscess. This abscess, instead of healing after incision, as is usual, persisted, and when I saw him at the expiration of two years I found considerable involvement of the epididymis, some enlargement of the testicle, and this fistula still discharging pus. This man also had an enlargement in the inguinal region, a lymph gland, which was tubercular. I was unable at that time to find any involvement of the lungs or any other part of the body. Operative measures were advised and carried out, and the patient made a good recovery, high resection of the cord and castration being done. Five or six months later this man returned with involvement of the other testis, and that was removed also. I will state that from the best examination that could be made with the finger the seminal vesicles and prostate revealed no evidence of disease. After the second operation, while convalescing, the man developed a little tuberculous focus on his forehead and another on the dorsum of one foot. It has been four months since the last operation, and he is in good health so far as I know.

This case certainly shows that injury does predispose, or does sometimes act with the tubercle bacillus in producing this lesion.

My experience leads me to believe that high resection of the vas and castration will give the patient the best chance for a permanent cure. I fail to see any reason for curetting out these foci, as recommended by some authorities, or partial castration, or excision of the globus major, globus minor, or epididymis. I do not believe that leaving the normal-sized testicles, without the vas, will be of any great benefit, therefore I see no place for this operation. If you are going to do anything, castrate and remove the cord high up; otherwise I would temporize. If a man had general tuberculosis involving the lungs, if numerous foci were discovered throughout the body, so there would be no chance of improvement by removing the testicle, I would let the man alone. However, if there seemed to be any chance or promise of benefit from the operation, I would advise early removal of the testicle and excision of the vas high up.

Dr. Carl Weidner: In closing the discussion I would like for Dr. Abell to answer the following questions: What proportion of cases give a history of previous gonorrhea; second, what is the relation of this condition to age, that is, what is the most common age at which this condition occurs; does it occur during active sexual life?

Dr. Irvin Abell: The question of etiology was purposely omitted from the paper. In those cases of descending infection, the process begins higher up in the genital tract and extends along the vas deferens. It is claimed by some observers that tuberculosis never extends in a direction opposite the stream, whether it be blood, lymph, or secretion stream. In cases of primary tuberculosis of the testicle the most reasonable explanation is that infection occurs through the blood current, the source of the bacilli being the lymphatic glands of the mediastinum, which have been shown to be tuberculous in seventy-five per cent of cases. The reason why tuberculous infection, being carried through the blood current, becomes localized in the epididymis remains unsettled. There is a history of gonorrheal epididymitis in a good percentage of cases. In the series of one hundred and twelve cases collected by Kocher and Simmonds there were twenty-five with a previous history of gonorrheal epididymitis. Birch-Hirschfeld reports that a German soldier who had a gonorrheal epididymitis developed tubercular infection of the epididymis, and died in eight days from acute miliary dissemination throughout the body.

It is claimed, also, that slight trauma plays quite an important part in tubercnlosis in this situation, provided the injury is not very

extensive. It has been shown by Simmonds that by injection of tubercle bacilli into the peritoneal cavity of rabbits, then slightly bruising the testes, leads to tubercular infection of the testicles. Where the injury has been severe, it is claimed by Volkmann that the reparative process is so active as to overcome the tubercle bacilli. As to why the tubercle bacilli should lodge in the epididymis and not in the testicle, the explanation has been offered that the branch of the spermatic artery which goes to the epididymis is more tortuous and offers a certain amount of hindrance to the blood current and also to the bacilli, thus favoring their localization at this point.

The age at which these affections most frequently occur is during the period from fifteen to thirty years, that is, during the most active period of sexual life. This is one reason why some operators suggest resection of the vas instead of castration. Many men have stated that they would rather be dead than have a double castration done upon them at that time of life. Reports from the Heidelberg clinic, I believe, are exceptional; they show twenty-one cases of bilateral castration, in only one of which was there any marked psychical effects following the operation; five showed some decrease in sexual power; all the rest showed no decrease in sexual vigor or desire, even after observation extending over a period of twenty years. I have one case of double castration, without high resection of the cord, done three years ago, with the same experience. Perfect relief followed the operation; the wound healed, all lesions disappeared, and he still retains his sexual desire and power. That there is an internal secretion of the testicle seems abundantly proven by a number of observers, who show that this gland does not atrophy after ligation of its duct, which atrophy we know occurs with all purely excretory glands after ligation of their duct. The testicle retains its size and still has the power to produce spermatozoa. Another evidence is shown by the effect of castration before full development is reached. To a young man, particularly at the age at which these affections occur, between fifteen and thirty years, castration is a serious procedure to contemplate, and this is an important point in favor of a conservative operation. Results are still more favorable from conservative methods than from castration. I do not see why we should remove the entire testicle when only a portion of the epididymis is involved. If we can preserve the testicle, and still cure the patient of his trouble by resecting a portion of it, I think we should certainly give him the benefit of the more conservative operation.

Cancer of the Esophagus. Dr. J. M. Krim: This is a post-mortem specimen of cancer of the esophagus. The patient was a man who had just returned from a pleasure trip to Germany, and came under my observation about three months ago. He apparently had no indication of his condition when he left here for Europe seven months ago.

When I saw him three months ago he complained that he could not swallow solid food without considerable difficulty. After several examinations I detected what I took to be a stricture of the esophagus, and found that I could not pass a No. 30 bougie. The solid food that he endeavored to swallow was shortly afterward vomited; for quite a while he was able to swallow liquid food, but finally that would be regurgitated. I think it was about four weeks ago when I made the last attempt to introduce an esophageal bougie and failed, but I did succeed in getting a large soft bougie through to the stomach. The man's breath had a fetid odor, and he vomited and coughed up some exceedingly fetid material, which probably came from the lower part of the right lung. As will be observed by examination of the specimen, the lower third of the right lung, which was also taken away, was gangrenous and almost black. The esophagus was densely adherent to the surrounding structures, and evidently the cancer ulcerated through into the bronchial tubes, which may account for the gangrenous condition of the right lung.

Operation for Umbilical Hernia. Dr. W. H. Wathen: This specimen is an umbilical hernia operated upon a week ago yesterday by Dr. Griffiths and myself. The lady, aged forty-two years, was a patient of Dr. Griffiths. You will see the omentum protruding from the sac, to which it is firmly adherent. You will also observe a very much thickened aponeurotic structure around the neck of the sac at all points.

The interesting part of this case is that the woman is enormously fat, weighing about two hundred and seventy-five pounds, only about five feet four inches tall, with fat across the abdomen below the hernia probably six inches in depth, with an enormous roll hanging down. These fat cases have been considered by many surgeons as usually inoperable in that the immediate mortality is greater than in thin people, and the permanent results very poor. The methods usually employed have been to take out the hernia and dissect up the muscles and unite them

laterally with some of the fascia. This operation was not performed after that fashion. The hernia was cut out by making an incision crosswise below and above the hernia about six inches in length, then dissecting down to the sac and scraping the fat off the aponeurotic structures down to the base and then for one and a half inches below, above, and laterally. The sac was then removed and the peritoneum dissected from the aponeurosis for one inch or more above and below, and sutured with No. 2 catgut. Then the aponeurosis above was brought down over the aponeurosis below and united transversely first by four silver wire sutures inserted one and a half inches above the lower margin of the upper border of the aponeurosis and about a quarter to half an inch below the upper border of the lower part of the aponeurosis, then the upper layer that was now lying down near the fat abdomen was sutured by a running catgut. We then had the opening closed by a suture of the peritoneum, and by overlapping of one and a half inches of the aponeurosis, making double thickness. The tissues above in this case were very easily united by interrupted silkworm gut, so that we had buried only catgut in the peritoneum, that in the aponeurosis and the four silver wires.

The woman has had no elevation of temperature and no increase in the rapidity of her pulse, and she is in practically a normal condition. Some of the sutures were removed yesterday, and there is no tendency toward suppuration.

This is the second case of the kind that I have operated upon within the last few weeks; the first one, a lady aged fifty-two years, also having a ventral hernia with great adhesions of the intestines and omentum. In both cases I removed the larger part of the omentum, and sutured after the fashion described. The first case had no trouble following the operation, and has returned home.

This operation has been performed not very often but quite a number of times during the last few years by Mayo, of Rochester, Wis., and by a few others, and it is to my mind the rational method of operating in these cases, because we find that the only strength we get in union of the abdominal wall lies in the fascia. I have no faith whatever in any permanent union from the muscles unless the muscle is wrapped in fascia and held there. If you suture the ends of the muscles it gives no strength; if you suture the sides of the muscles it gives no strength; then again, in these fat women, after you have dissected out an umbilical hernia the muscles have gotten so far apart that you

have to dissect far out into the tissues to get to them, and when you get to the muscles you will often find they have undergone fatty degeneration; so I see no necessity of attempting to find the muscles in any of these cases; save the fascia in front of the muscle and lap it over in any direction that it unites most easily. You may lap it transversely, vertically, or obliquely, and you may suture the wound over this in any direction you please. I think it is a good idea, if possible, to make the incision in such manner that after you suture the fascia and aponeurotic structures you may bring these tissues together without any more buried sutures, for we know buried catgut, or any other absorbable suture, is liable to cause suppuration in the fatty tissue that we have here.

What will be the ultimate result in these two cases I do not know; in fact, the time has not been long enough following this method of operating for any one to say positively, but it certainly seems to me to be the most rational procedure, and the operation is practically devoid of danger and easily performed, and ought to be more successful than any other.

Dr. George W. Griffiths: I had the case reported by Dr. Wathen under observation for probably a year. She had tried every way in the world—by umbilical trusses, abdominal supporters, etc.—to retain the hernia without any effect, except perhaps to increase her discomfort. It was one of the most unfavorable cases that can be imagined for operation. She was pot-bellied, exceptionally fat, but a very cheerful and brave little woman. Operative intervention offered her the only hope of recovery. Nothing could be found in the way of a device which would retain the hernia in position. I suggested operation to her months ago.

PHILIP F. BARBOUR, M. D., *Secretary.*

THE KENTUCKY SCHOOL AND HOSPITAL MEDICAL SOCIETY.*

Stated Meeting, February 27, 1902, the Vice-President, Charles W. Hibbitt, M. D., in the Chair.

Resection of the Knee for Tubercular Ankylosis. Dr. John R. Wathen: The following case is interesting from one or two standpoints. It is a resection of the knee, which I performed about four weeks ago for relief of tubercular ankylosis. The knee was badly flexed. In July last the patient developed an abscess six inches above the knee on the inner side, which left a sinus that healed in a few months. Another abscess developed just below the knee on the outer side, and the patient was finally left with a complete ankylosis—typical tuberculosis of the knee-joint.

There was no suppuration at the time of the operation, but quite a large quantity of yellow, creamy, tuberculous material was encountered. I did the anterior flap operation, removing the patella; also the capsular ligament, the lower one inch of the femur, and probably one third of an inch of the tibia, approximating the ends of the bones, and put in a drainage-tube. The leg was put in plaster-of-paris dressing, and later I removed part of the plaster by sawing through and lifting off the upper part. The patient went along nicely; there was never any suppuration. I removed the stitches and the wound was apparently healed; I also removed the drainage-tube. Ten days ago he developed an abscess in the track of the old sinus, fully six or eight inches above the knee-joint. This abscess probably contained two teacupfuls of flaky pus, typical tuberculous material. The pus burrowed its way down to the lower end of the wound, which had healed, and discharged at this point. Under local anesthesia, with a long probe I made an opening through from the anterior to the posterior part of the leg until I could get a drainage-tube entirely through, and washed it out with strong chloride of zinc solution.

A week later he developed another abscess on the other side of the leg, in the track of the other old sinus, which I also opened and drained through the lower end of the original flap incision. Both drainage-tubes run from the end of the incision back to the lower part of the leg, getting drainage at the most dependent portion.

The original incision, except for the drainage openings, has completely healed, and I think the bone has also united, because the man

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

can move his leg, whereas he could not do so previously. He has complete use of his foot. There has been a little swelling about the ankle, which I think is an edema, as it pits on pressure, etc.

What I would like to ask the Society is, whether the recent abscesses which have developed resulted because of the traumatism committed on the joint, or whether they would have occurred independent of the operation? Furthermore, I would like to know what would be considered the prognosis in this case. There seems to be a difference of opinion among operators in regard to bone tuberculosis. The operation in this case was a perfect success, the wound has healed, and the bones have united. The only thing left is a small opening above where the abscesses were located, and I think there is every indication that this will heal. Of course the man will have a stiff leg, but it is in a straight position. Before the operation the leg was badly flexed. I claim that tuberculosis is a general disease, more or less, and these joints are simply local manifestations.

Discussion. Dr. A. D. Willmoth: I think if the doctor will continue to wash out the abscess cavity, as he states he is now doing, he will finally get a cure. He is certainly to be congratulated upon getting union of the bones without infection occurring.

Dr. H. Orendorf: Latent tuberculosis is often excited by any operation done upon a latent tubercular case. It seems that the tubercular toxine gives up its poison in a very slow way, manifesting itself principally at the port of entry. I do not believe that the tubercle bacillus has any predilection for any certain tissue. It attacks any tissue, at any port of entry, and there it makes its manifestation known, and thence may be conveyed to other parts of the body and by its transplantation infection at other points may take place. In the case Dr. Wathen describes, I expect the interference for the time being aroused the antagonism of the latent tubercle bacilli, and in that way he had some liquefaction of tissue.

Operation for Breast Tumor. Dr. W. H. Wathen: This specimen is a breast removed last Tuesday morning, with the assistance of Dr. Dunn. The patient was brought to the infirmary from Indiana, with this little tumor in the breast, a little above and to the inner side of the nipple. It was very hard, not fixed to the skin, but could be detected readily as extending into the surrounding tissue; in other

words, we could detect that there was no capsule surrounding the tumor. It being positively a neoplasm of the breast, I advised operation, though there were no glandular enlargements that could be felt in the axilla or elsewhere, for the reason that the latest statistics, collected from various sources, have demonstrated that when you have a positive neoplasm in the breast practically 100 per cent will finally prove to be malignant, hence they are all operable cases. Therefore you should operate as early as possible, before involvement of other structures takes place, if you expect to have no return of the disease. You will see from the specimen that it is imperceptibly merged into the surrounding tissue, with no shadow of a line of encapsulation; it is a perfectly hard mass—almost woody in hardness—and while no section has yet been made for microscopical examination, the macroscopic appearance is sufficient to make the positive diagnosis of carcinoma.

In this case I do not believe the disease will return, because it did not involve other structures; there was no glandular involvement in the axilla, and we removed all the fatty tissue and fascia immediately under the part of the breast in which the tumor was located.

Discussion. Dr. J. T. Dunn: I had the pleasure of assisting Dr. Wathen in this operation. I did not see the patient before she was placed on the operating-table, and made no examination previously. Like Dr. Wathen, I believe it is our duty to remove all tumors of the breast of this character. Not only should we remove the growth, but we should go wide of the tumor, getting well into healthy tissue, which Dr. Wathen did in this case. This tumor was very close to the nipple, and yet there was no retraction of the nipple, nor was there any glandular enlargement. So I take it this is one of those benign tumors which would finally result in malignancy, and I think we very wisely advised and secured removal of the growth.

Dr. H. Orendorf: Since it is not a clear case of Paget's disease, I take it that the clinical aspects were such as to warrant Dr. Wathen in removal of the growth. In other situations a growth of this kind may be attacked and removed by the application of those agents which seem to break down abnormal cells and leave the healthy cells in their place. Such a paste as Marsden's often acts well in situations where it can be safely applied, rather than to use the knife. But in the breast the gland is in a prominent position, where friction, etc., will produce irritation, which increases the tendency toward malignancy, and paste

is not applicable; a tumor here will usually undergo malignant change and gradually involve the glandular structures, adjacent and otherwise.

Tubercular Peritonitis. Dr. J. T. Dunn: A mulatto woman about thirty years of age came to me about four weeks ago. She is a single woman. She had considerable abdominal enlargement, and said people were making remarks about her condition; that she was sure there was nothing wrong as far as her purity was concerned, and asked me to make an examination. Her mother came with her. I first examined her abdomen and found considerable enlargement, which was in the region where we would expect to find a pregnant uterus. I then made a vaginal examination and found the cervix normal in size, soft and natural in its feel. She had given a history of having regular menstruation, with about the usual amount of pain. I examined the breasts and found no indication of pregnancy; the nipples were normal in size and color; breasts soft and pliable. I then introduced a probe into the cervix, and without pressure it entered the uterus without resistance for a distance of two and a half or three inches. I was satisfied then that the condition was not one of pregnancy, but there was a growth of some kind in the abdomen. Palpation with my other hand on the opposite side gave evidence of fluctuation, which of course indicated fluid. Percussion gave a dull note all over the abdomen, extending well up above the umbilicus. The line of dullness was transverse; that is, just below the transverse colon down there was complete dullness; no tympanites in any direction. This examination was made with the patient lying down. I had her stand up, and found the line of dullness exactly in the same direction. I therefore knew the fluid present was confined to a sac and was not loose in the abdominal cavity; that there was no ascites.

She returned last week with the abdomen very much larger than it was at my previous examination, and I had Dr. W. H. Wathen see her with me after I had made a second examination. I had made the diagnosis of an ovarian cyst. Dr. Wathen examined her and did not think it was an ovarian cyst, and as it was a case that could be turned over to the clinic Dr. Wathen asked me to assist him in the operation, which he did last Tuesday, making an incision through the median line just below the umbilicus, a very short incision at first. Coming down upon the peritoneum we found that after we had opened the peritoneum we were still not in the cavity, and there was a cyst or wall that we still

had to go through. Dr. Wathen thought at first it was a malignant condition, and we almost decided to go no further with it, but a little manipulation proved that this was a cyst wall or sac which we were down upon, and pinching it with forceps allowed the escape of some straw-colored fluid. We then opened the sac and considerable straw-colored fluid escaped. We evacuated the sac and stitched the wall, having decided that it was not feasible to remove the sac, as it was adherent to everything in that neighborhood. The opening in the cyst was closed with the abdominal wound; a drainage-tube was inserted down to the bottom of the cyst. The woman has not had a bad symptom since the operation.

Discussion. Dr. W. H. Wathen: The case was of unusual interest in the first place, because it illustrates how difficult it is in many instances to make a correct diagnosis of the pathological condition in an enlarged abdomen, and how difficult it often is to perfect the diagnosis in some instances when the abdomen is opened. I am not positive now as to the exact nature of or the pathology in this case. There seemed to be the remains of a cyst wall particularly attached to the right side of the anterior abdominal wall. The intestines did not protrude, and the liquid seemed to have been confined either by adhesions or in a sac, or the intestines were bound down by some means which prevented any coil from coming into the abdominal wound. If this had been a cyst cavity, then I could not have found an opening upon each side of the wound and examined the ovaries, as was done, without tearing through the cyst wall. Further, on the left side and above could be plainly seen the diseased omentum, which could not have been seen if we had been in a cyst cavity.

My opinion is that this case is one beginning as an ovarian cyst, or possibly an intra-ligmentary cyst upon one side of the uterus, and, gradually ascending under the peritoneum, was finally attacked—with the intestines, ovaries and tubes, and the peritoneum—by tubercular involvement, and that the cyst was, in some of its parts, destroyed and ruptured, and the intestines, parts of the cyst wall, and the omentum were matted down high up in the abdomen upon both sides by tubercular infiltration. Everything indicated tubercular trouble.

The patient, as Dr. Dunn reports, is doing nicely, and I believe will get well; and if she does get well it can not be malignant, and it will be most positively tuberculous. She looks like a tuberculous patient.

These tubercular cases are peculiar, and they often recover, apparently, after abdominal section without any kind of other treatment, local or general. So marked has this apparently been that it is generally conceded by the medical profession and by surgeons that the treatment of tubercular peritonitis, after it has passed the acute stage, is laparotomy; but the results are not good in the acute stage, nor possibly in the very late stage, but in all other stages it is the treatment indicated. Yet we find that some of the best surgeons we have claim that laparotomy is not the proper treatment in tubercular peritonitis, because their experience leads them to believe that their patients have done just as well and recovered as promptly under good hygienic, sanitary, and medicinal treatment. I do not believe, however, this is true, and in tubercular peritonitis, like tubercular disease in other parts of the body, there are many cases where they can never be cured except by surgical intervention, and may often be cured by this means. I have had a number of cases of tubercular peritonitis who apparently were entirely cured by laparotomy. Recently I operated on a woman who had an ascitic accumulation of three gallons of the same straw-colored fluid we found in this case, whose peritoneum was studded with tubercular infiltration on every part of the abdominal wall, over the intestines, omentum, uterus, ovaries, tubes, and the mesentery. The intestines were extensively involved, because when I took a coil of the ileum in my hand it could hardly be bent; it was stiff and hard, and really I felt if I had attempted to double it it would have broken in two, so hard and resisting was it. This woman, I understand, has been greatly benefited in every way. I hardly see, however, how she can get well, because the walls of the intestines were involved, but not, I am sure, the mucosa of the intestines, because she had no diarrhea or dysentery such as we find in intestinal tuberculosis involving the mucous membrane.

The essay of the evening, "Stricture of the Urethra," was read by Henry Orendorf, M. D. [See page 249.]

Discussion. Dr. J. T. Dunn: The paper mentions a point which is often overlooked in treatment of stricture, namely, drainage. To get proper drainage we must have a urethra which is about the normal size, and this is effected by the hair-line incision mentioned by the essayist, or by the urethrotome, and is further accomplished by dilatation, con-

stantly or at intervals, by means of some dilating instrument or by sounds of proper size. I have not had very satisfactory results from dilating sounds, pointed sounds, forcibly breaking down these strictures and effecting their absorption by that means. I have not had sufficiently satisfactory results to allow me to advise the use of sounds as a means of dilatation. I always advise internal urethrotomy where it is possible to do so, and when this seems impossible, external urethrotomy may be done, thereby securing the best results.

Dr. J. W. Irwin: I am particularly pleased with the paper, first, because of its brevity, secondly, because of the great abundance of common sense expressed in a few lines. It is the first paper I have ever heard read on a practical subject that shows such thorough knowledge on the part of the essayist. He has not said much about the method to be employed in breaking up or disintegrating these peculiar bands or strictures; he has left that to the imagination of those who have heard or will read his article. I think he is wise in that, because some of the cases can be cured without operative measures; therefore he leaves that an entirely open question, as in most diseases the condition present calls for a specific form of treatment.

I wish simply to say that this paper can not be too highly commended by the general surgeon who is starting out with the idea that the urethrotome should be used in all these cases. It takes, in the first place, a very skillful urethral surgeon to use the urethrotome properly in these cases, and there is some danger that he may occasionally go too deep, and wherever he cuts into the muscular tissues he is bound to have a cicatrix, and we know of no process by which a cicatrix can be eradicated once it has formed. Hence we have all seen bad results in men who have had urethrotomy performed, and where divulsion has been done. We have also seen these cases recur from time to time, no matter what method of treatment has been employed, where divulsion has been too great or where the urethrotome has been used carelessly.

Dr. J. R. Wathen: The essayist has given us quite an elaborate, although brief, paper upon the pathology, origin, etc., of urethral stricture and its cure. He has demonstrated the true condition we have in the urethra when we have a stricture organic in type, and by this method of reasoning we can readily understand how we may have a stricture, which is just beginning in its formation, which can be dilated and cured without thickening; and the other type, which is older, with a

cicatrix of hard, fibrous, and dense tissue, has to be divided to produce a cure. Specialists seem to differ as regards the pathology of old organic stricture. I have always believed that its cure by division is brought about largely by relieving the sclerosis which has taken place in the blood-vessels toward the center of the stricture, allowing it to become more vascular, and in this way absorbing the hard and dense cicatrix which has formed, and only by division with the knife can we allow this to take place, and division should be followed by dilatation. Whereas in strictures of short duration, or the early type, the soft granulation-connective tissue, we can easily produce a cure by simple dilatation without division of the fibrous bands necessary in the other type.

Dr. George B. Jenkins: I would like for the essayist to tell us, in closing the discussion, where he makes the dividing line between internal and external urethrotomy—that is, the indications for each of these procedures.

Dr. H. Orendorf: I am extremely obliged to the Society for the kind remarks in regard to the paper, which I tried to restrict to the shortest possible limit. The difference between the organized and unorganized deposit, is, I think, the determination for the treatment thereof. If the deposit is not organized, then it needs no incision or division; whereas, if it is organized it certainly needs incision. Internal urethrotomy, in my judgment, is always to be chosen of the two methods, and by internal urethrotomy we get the best effects and the best natural drainage. By removal of the deposit and by the accomplishment of perfect drainage we certainly improve the adjacent organs in their physiological function—in fact, we clear up adjacent organs such as the bladder, and we relieve, by drainage, a condition which would otherwise become more or less systemic.

I repeat that the remarks I made were for the purpose of emphasizing the importance of absorption in order that perfect drainage may be the result, not only to obtain relief from the local organized stricture, but from a general systemic condition as well.

Remote Effects of Syphilis. Dr. J. W. Irwin: Three or four months ago a gentleman came to me from Philadelphia, where he had been in a hospital for seven or eight months. He came with the idea of having a diagnosis made as to his condition. The man was fifty-three years of age, and two years previously had lost his wife, over

which he had grieved a great deal. This was his history. He took to drinking on the advice of a physician in his native city, so as to drown his grief. This only made him worse, and a trouble came about for which he went first to a sanitarium near Cincinnati and remained there for a while, then returned to Philadelphia and remained there for seven months.

As he came into my office he was assisted on the arm of his nurse. He looked wild, pupils widely dilated; he staggered more or less, and dragged his right leg. In trying to elicit a personal history from him, after many inquiries I learned that eight years previously he had syphilis, and had been to Hot Springs, Ark., had taken the baths there and also doses of iodide of potassium, such as the specialists in that line have been using there. He came back cured, so they said. The treatment extended over a period of fifteen months from the time he observed the initial chancre. This was all the treatment he had received. He had pain over the anterior part of the left hemisphere, extending back beyond the median line of the ear, back to the center of general sensation of the same side. He had also paresthesia. He complained of hot and cold pricking sensations, or strange numb feelings in his right leg, with some slight loss of muscular power of the right leg and also the right arm. His right hand was also somewhat affected; he could not pick up a pin, sensation was so much impaired. His mind was wandering; he had a series of hallucinations, one of which was that he had lost all of his sexual power, and that he was a doomed man. This was the one that preyed most upon his mind, and the one that attacked him from the very beginning. He was fairly well nourished, had some appetite, digestion seemed to be good, and the functions of the body were in other respects regular. He suffered greatly from insomnia, and had to take hypnotics in large quantities to produce sleep. At times he had attacks of melancholia, threatened frequently to commit suicide, and sometimes to commit homicide. He had a strange antipathy for the physician who had advised him to drink, and had often declared during the past few weeks that he would kill that physician on sight—that he was the cause of all his troubles. The man, before that time, had never drank anything in his life. He occupied a very prominent place in commercial circles, and still does, in one of the largest cities of the South. His sexual power, instead of being diminished, was very troublesome; he suffered a good deal from priapism, and, oftentimes, nocturnal emissions.

After much questioning I obtained this history from the man himself, his attendant, and also his sister, who was with him all the time. I made a surface investigation over the right temple, also the right hemisphere over the frontal lobe, and found that the temperature in that region was one and one half degree higher over the left temple than on the right side. This, at first sight, appeared to be strange, but the physiological fact is that the left temple is always from one half to one degree higher in temperature than the right. Consequently, I could discover but one half to one degree of elevation of temperature. This man, with the symptoms present, especially this peculiar, dull pain, this partial loss of power, especially on the right side, the history of the case, the paresthesia, the syphilitic history, although a little remote, led me to believe he suffered from a tumor of the motor region of the cerebrum in the anterior lobe, but the pain was reflected backward through the lobe of general sensation in the posterior part of the cerebrum. Furthermore, from the amount of paralysis present, I believed there was no lesion affecting the motor center; paralysis was not sufficient to justify that opinion. I believed that it was a relative paralysis, that the tumor was located in front but through the convolution extending from the frontal lobe to the motor center, the middle lobe of the cerebrum, and there was a consequent loss of power. The trouble seemed to be slightly increasing, and possibly the growth was encroaching upon the anterior margin of the fissure of Rolando. I presumed that I had to deal, and made the diagnosis to that effect, with a syphilitic tumor in this region, and so informed the sister and nurse. I sent him to a place where he could be properly cared for under charge of his nurse, his sister also remaining with him, and put him on anti-syphilitic treatment, prescribing a special diet, plain nutritious food, away from all noises and interference of other people, prohibiting any attempt to leave or communicate with the outside world. After the continued use of iodide of potassium, beginning with forty grains, increasing rapidly to one hundred grains within a week, three times a day, the symptoms gradually began to subside, and within six weeks he was able to dismiss his nurse, walk about the streets, and attend to his own wants. He had also lost his hallucinations and his suicidal and homicidal tendencies.

He has been under my care now for nearly four months. He is rational in every respect, and I allow him to write a short letter once or twice a week to his family. He writes very well, does not miss any-

thing in writing, and his thoughts are well connected. He sleeps well without the use of any hypnotic, pain has disappeared, and there is but one little spot of numbness, just above his toe. The limp has entirely disappeared, and he can use one leg equally as well as the other. He can walk and exercise as well as he ever could, and complains of nothing except a little paresthesia of one toe.

Discussion. Dr. H. Orendorf: I believe it is understood that early paralysis, under the age of forty years, is due to syphilitic deposits. Dr. Irwin's case is one deserving of much study and reflection, and it shows what anti-syphilitic treatment will do in a case of this kind if properly pushed.

I once knew of a case of cerebral syphilis which had induced partial coma, but the man was able to swallow, and took as much as one thousand grains of iodide of potassium a day for six to ten days, and I think in one day took as much as thirteen hundred grains. It was taken in water as hot as could be borne, followed by large quantities of hot water besides. He also took succus alterans in teaspoonful doses three times daily; he also had mercurial inunctions well rubbed in, night and morning. The man made a good recovery. So far as I know, this is the largest quantity of iodide of potassium ever given in a single day. The case shows that the iodides have the power of attacking and disintegrating these deposits, rendering them more soluble, and perhaps aiding in their elimination. Large quantities of water, combined with a little chloride of sodium so as to increase the alkalinity of the blood, enhances the action and value of iodide of potassium. In this way we get enormous kidney and skin action.

Dr. J. W. Irwin: I have not given this patient over one hundred grains of iodide of potassium three times a day, although I have given this drug in doses as high as two hundred and sixty grains three times a day. We had in the clinic of the Kentucky School of Medicine last year a young attorney at law who came from Indiana, suffering with a tumor of the cerebellum. He had to be led into the clinic. He was broken down in health, and had spent all of his money in an effort to be cured; he had become a pauper, and appeared at the clinic. We diagnosed a tumor in the middle lobe of the cerebellum, and put him on the immediate use of one hundred grains of iodide of potassium three times a day. We treated him until the seventeenth day of the May following, when he walked out of the clinic apparently as well as he ever was in his life.

Treatment of Lupus by X-Ray; Continued Report. Dr. J. T. Dunn: At our last meeting I reported a case of lupus which I was treating by the new method, that is, the X-ray, and I want to report to-night that the patient is doing remarkably well. The original appearance of the growth has changed; it is healthy in its appearance, the integument is spreading out over the healthy granulating surface and will soon be closed.

The two cases of superfluous hairs reported at the same time have been entirely relieved. It has now been two weeks since any treatment was administered in either of these cases, and neither of them shows any return of the superfluous hairs.

Discussion. Dr. H. Orendorf: What is your theory in regard to the removal of a lupoid spot by means of the X-rays?

Dr. J. T. Dunn: The claim is that the X-ray destroys the cause, the tubercle bacillus; rather there are two claims, one is that the toxins are destroyed, the other is that the normal toxins are stimulated to do their duty more fully.

Gall Stones. Dr. J. T. Dunn: These specimens are gall stones which I removed six or eight months ago from an elderly lady, the mother of seven or eight children. She was small, with very thin abdominal muscles, and she had no pain from these fourteen gall stones which I show you. She had absolutely no pain from the presence of these gall stones, and only discovered their presence when taking a bath—in leaning forward she felt a prominence in the right hypochondriac region, and immediately made up her mind that she had a tumor. She came to me, and I placed her on the examining table; searching in the location of the supposed tumor, I was unable to find it. After turning her first on one side, then the other, and still failing to locate the tumor, she said she would show me how to find it. She stood up and leaned over as she had done after taking a bath, and the abdominal muscles were so thin that she could take hold of the tumor after getting it between the thumb and fingers. I could feel very distinctly not only the gall bladder filled with stones, but could feel them slipping by each other by making pressure from side to side.

The operation for their removal was attended with no difficulty, and the woman made a good recovery.

Discussion. Dr. H. Orendorf: A doctor in Jefferson County, Kentucky, who suffered from gall stones, and who practiced according to the alkaloidal clinic, could not get any relief at home, so he went to Dr. Waugh's Hospital for diagnosis and treatment. He had been there a few days when an old doctor with one eye from down in Illinois came to the city, and told him if he would take ten to fifteen drops of Lloyd's specific (*chionanthus*) three times a day before meals he would be relieved and cured, and would not suffer a repetition of gall-stone colic. This was two months ago; the doctor has followed that advice, and is now in better health than he has been for several years.

Dr. J. W. Irwin: I have nothing to say in regard to the case of gall stones, but want to recur to the point in reference to the X-ray treatment of lupus: I can not quite understand how the X-ray would kill the bacilli of tuberculosis and not act upon the healthy structures. We have heard reports from time to time where the X-ray has caused violent burns. I would like for Dr. Dunn to tell us how he prevents this in applying the X-ray in cases of lupus and also for the removal of extraneous hairs.

A short time since an investigation bearing upon electricity, especially the use of the X-ray, was instituted by some surgeons and experimenters in Europe. They found if they planted a seed and exposed it to the ordinary moisture and rays of the sun that it took nine days to sprout. They found if they planted the same character of seed, in the same soil, covered to the same depth, kept it moist and exposed to the negative pole or X-ray, that it sprouted in from three to four days, while under the ordinary effect of the sun it required nine days to cause the same seed to sprout. This increase in growth of the seed was supposed to be due to the effect of the negative ray, or X-ray. Consequently, the tubercle bacillus being a vegetable and not an animal organism, it seems strange to me that the X-ray should kill the tubercle bacillus and at the same time increase the growth of vegetation as it has done. I would like for Dr. Dunn to tell us how strong he uses the X-ray, and by what means he prevents burning the patient.

Dr. J. T. Dunn: In answer to Dr. Irwin's questions: We find a great many people who can not stand the effect of the X-ray, one or two exposures producing quite an irritation of the skin, resembling sunburn. So we have what we call an idiosyncrasy in that patient. We know that some people can not take quinine, some can not take opium in any form, and we do not know in the beginning of the use

of the X-ray treatment for therapeutic purposes whether we are dealing with a patient of that nature or not. We can only tell by using the X-ray cautiously and then determining what the effect is going to be.

Prof. Nicola Tesla tells us that if we impose between the patient and the Crookes tube a screen of some metal, and for that purpose he advises aluminum on account of its lightness, and if this plate is grounded, that we can prevent burning the patient by the X-ray, as the gases which do the damage are carried off by means of the ground wire or are arrested in their passage toward the patient.

The X-ray will burn if the exposure is too long, or if the tube is placed too close to the patient, or if the current used is too strong. Only experience will teach one what strength of current he is using; we can not tell by measuring it; you have to use your judgment by the appearance of the tube at the time you are making the exposure. The distance from the tube to the patient has a great deal to do with it, inasmuch as the patient placed close to the tube is much more liable to be burned than when placed quite a distance from it. In the cases in which I have been using the X-ray for therapeutic purposes, the distance between the tube and the patient has been about ten inches.

The destruction takes place in the inverse ratio of the degree of organization, that is, highly organized tissues melt away first under the X-ray; in other words, first the hair follicle and lastly the skin. You can bring the patient up to the point of resistance, where you notice the skin is becoming irritated after a few exposures, then all treatment should be suspended, and you should wait for the subsidence of this irritation. The hair and sebaceous follicles are the first to show the reaction; this can not be determined by visual inspection, but when you take hold of the hair and find it is loose you know that you have gone as far as necessary with the treatment. When this point is reached you simply try to hold it there, the same as you would medicine in the treatment of any disease, not increasing the time of exposure or the amount of the current. If you push the treatment beyond that point the skin becomes resistant, irritation is set up, and you have dermatitis; if you still further persist, you have the gangrenous change which we all dread in these cases, as it is a difficult thing to cure.

JOHN R. WATHEN, M. D., *Secretary.*

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THANKS TO THE LEGISLATURE OF KENTUCKY.

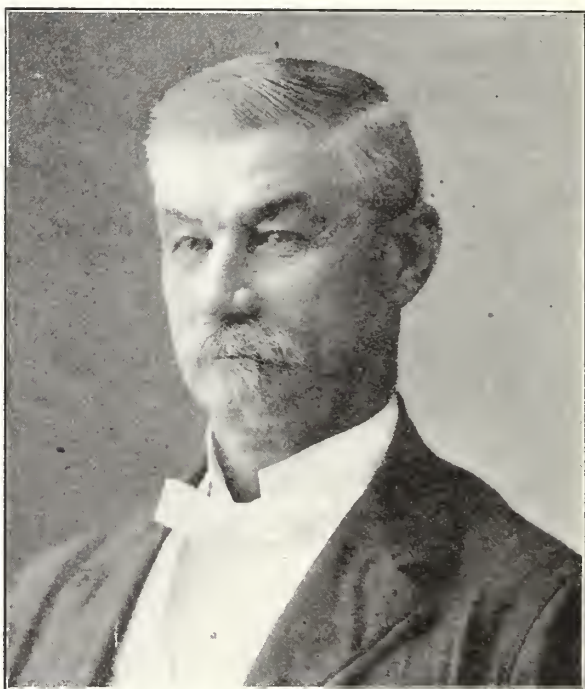
The medical profession of the State of Kentucky owe a debt of gratitude to the Legislature of Kentucky for the good judgment used in its non-interference with the medical-practice act. Everybody, both allopaths, homeopaths, and osteopaths, are benefited by the laws pertaining to the practice of medicine remaining as they are. The osteopath is permitted to practice medicine, although he is not a medical doctor and has no claim whatever to practice in the State except under the Hobson decision, which is, and will ever remain, a monument to that distinguished jurist, for the reason that he decided that the osteopath was not a doctor, yet he had a right to practice his art, if it be called such, under the guise of medicine, and collect a fee for the same. The osteopath has no right to ask for a special examining board. His chief and only claim seems to be a knowledge of anatomy, and no one will attempt to say the anatomy which the osteopath claims so much for differs in any way from the anatomy taught by the allopaths and homeopaths, and yet they are calling for a special examining board and want permission to practice in all the branches of medicine except major surgery.

If anatomy is the only branch of medicine that they attempt to study, then the anatomist that examines the homeopaths and allopaths are competent in every particular to examine the osteopaths.

The fact of the matter is that there was a good-sized "nigger" in this osteopathic wood-pile. It was not the examinations that they cared so much about as it was the examining power. The fact that they asked permission to practice every branch of medicine except major surgery shows very clearly that it was their intention to give everybody license to practice who might come and pay what was demanded by their examining board; hence we say that the profes-

sion ought to feel grateful to the Legislature of Kentucky for the wise manner in which it disposed of this bill. It would have rendered Kentucky a nuisance not only to the profession but to the general public. The profession will certainly not forget those members of the legislature who took an active part in defeating this bill; they deserve more than ordinary consideration, as they have been really and truthfully public benefactors, and when they ask favors at the hands of the public we most earnestly ask our professional brothers not to forget that one good turn deserves another.

DR. J. R. TIMBERLAKE died in this city on the 15th of March, 1902, from a paralytic stroke. He was sixty-seven years old, and was a native of Ohio, but moved to Kentucky with his parents in 1847. He graduated from the Kentucky School of Medicine in 1857 and began the practice of medicine in this city, and a few years later became editor of the Louisville Medical Journal. At the beginning of the war between the States he sold his journal, and in 1864 moved to Beard's



DR. J. R. TIMBERLAKE.

Station, in Oldham County, and remained there until about fourteen years ago, when he returned to Louisville, and almost immediately he was in full practice, and at the time of his death but few practitioners in this city had a better clientele than he. He was a quiet, unassuming man, and was one of nature's noblemen, honest in every particular, and idolized by his patrons and friends. He leaves a wife and five daughters.

THE AMERICAN PRACTITIONER AND NEWS.

"*NEC TENUI PENNÂ.*"

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

DIPHTHERIA.*

BY M. K. ALLEN, M. D.

Diphtheria was first definitely described by Bretenneau, who presented his celebrated treatise on the subject to the French Academy of Medicine in 1821. The recognition of the disease clinically as a specific contagious disease was first determined by Trousseau; the anatomic investigation of the membrane and its mode of formation is credited to Virchow, Wagner, Weigert, Cohnheim, and others; the remote lesions to Oertel, Babes, and others; the discovery of the bacillus and its relation to the disease to Klebs, Loeffler, Yersin, and others; the clinical evidence of the value of antitoxin to such men as Welch, McCollon, and others.

While it is now possibly one of the best known of any of the infectious diseases, yet it was not until 1884 that Loeffler fully succeeded in demonstrating that a certain germ, known as the Klebs-Loeffler bacillus, was the cause of diphtheria, and was to be found in the inflamed patches in the throats of persons suffering from this disease. It was also known at this time that if a portion of the diphtheritic membrane was rubbed over the surface of solidified blood-serum the diphtheria germs present in the membrane would multiply and produce a visible growth, an examination of the latter showing the presence of large numbers of characteristic germs, which the skilled bacteriologist could readily and at once recognize. Thus it becomes possible to make an accurate and positive diagnosis of diphtheria, and to distinguish true

*Read before the Louisville Clinical Society, March 11, 1902. For discussion see p. 303.

diphtheria from other forms of inflammation. Prior to 1895, when diphtheria antitoxin was first used to any great extent, the mortality from this disease was very great, both in this country and in Europe.

It is my purpose to give you some statistics as to the mortality from diphtheria as occurring both in this country and abroad, comprising both the pre-antitoxin period and since. It is well to bear in mind the fact that it is extremely difficult to obtain or determine the exact death-rate occurring from diphtheria, because of errors in diagnosis. Follicular tonsillitis and other throat troubles are sometimes no doubt diagnosed true diphtheria, and especially is this error liable to occur during the prevalence of an epidemic of this disease. It may also happen that diphtheria is sometimes not recognized, and the little patient is treated for some other affection. Still again, the children of poor parents may have the disease who never come under the notice of a skilled physician. The most reliable statistics must, therefore, be gotten from hospitals and boards of health.

There is an additional difficulty in obtaining the death-rate from diphtheria for any given period. It sometimes occurs that visitations of this disease are extremely mild and again very virulent. In 1854, for instance, England experienced an epidemic of diphtheria with a mortality rate of 95 per cent in cases with nasal involvement. In 1881 Dr. Bulowsky, a Russian physician, reported an epidemic of diphtheria in a town called Samara, on the Volga River, in which of those affected under the age of five years 86 per cent died, and between that age and ten years 80 per cent died. In Germany, from 1885 to 1894, there were 119,038 deaths from diphtheria, the average number thus being 11,904 per annum. In the city of New York, in 1894, 2,359 persons died of diphtheria. In Boston there were more deaths from diphtheria in 1895 than for any other year in the previous eighteen, excepting the year 1881. In 1895 Philadelphia had a death-rate from this disease away above its average. Brooklyn, Chicago, Cincinnati, and St. Louis had more deaths from diphtheria in 1895 than for ten or fifteen years previous. In the city of Baltimore, for a number of years past, the health authorities and practicing physicians have had to contend with a very virulent type of the disease, which resulted in an unusually high mortality, the death-rate in 1894 reaching 74.15 per cent; in 1895, 71.42 per cent; in 1896, 51.78 per cent; and in 1897 they experienced a greater mortality than in any previous year. In that city it became necessary for the health

authorities to take very active steps in order to control the spread of the disease; they enforced isolation and thorough disinfection. They also required reports from the bacteriological department, based upon cultures obtained by a special competent medical officer, showing the throats of patients or other inmates of infected houses to be free from the Klebs-Loeffler bacillus before being released from quarantine. In addition to these practical precautionary methods, anti-toxin was distributed gratuitously to the amount of 1,300,000 units. Notwithstanding the means thus employed, the disease still prevailed in epidemic form in the years 1898 and 1899, during the last year of which the health department distributed 2,238,900 units of antoxin. During the last-named year they experienced a reduction in mortality to 17.49 per cent.

In contradistinction to the high mortality rates just mentioned, when an exceptionally virulent type of the disease prevailed, I will refer to periods when a much milder type must have been experienced. In 1876 Bernheim published a series of cases of diphtheria, four hundred and fourteen in number, showing a gradual fall in the mortality from this disease covering a period of twenty years. In one group of fifty-seven cases, from 1876 to 1880, in his private practice, there was a death-rate of 26.3 per cent; in two hundred and twenty-two cases, from 1881 to 1886, 20.05 per cent; and in seventy-three cases, from 1887 to 1896, the percentage fell to 13.7. He accounted for the lessened mortality by a diminution in the intensity of the disease. In the German Empire, according to a collective investigation of a summary of 4,479 cases of diphtheria in which no claim seems to have been made for special treatment—extending over a period from October 1, 1894, to April 1, 1895—there was experienced the low mortality of 14.7 per cent.

It is obvious that a death-rate so light as this, based upon such an immense group of cases covering a wide area, can only be accounted for by assuming that during that particular period there was a diminished virulence in the character of the disease prevailing. Such statistics show conclusively that an unexpectedly large number of recoveries from diphtheria may take place in a given series of cases, even though these cases in their clinical manifestations may appear to be of a degree of severity upon which we would ordinarily predicate an average death-rate. For instance, Piliere reports ninety-eight cases, in six of which tracheotomy was performed, with ninety-four recoveries. Flahaut forty cases, no deaths. Ritter published a report of sixty-two cases, with no

deaths. Piedallu, in 1894, without giving the number of cases, claimed to have no deaths since 1891, yet many were of the laryngeal variety. Loeffler, in 1894, reported seventy-one cases and no deaths. Gibbes, New Zealand, reported one hundred and forty-five cases treated with eucalyptus, and but one died, that one being an infant eight months old.

These and similar reports concerning diphtheria often come from sources of the highest repute, and go to prove how otherwise reliable observers may be misled by the vagaries of this disease, and the question of its mortality hopelessly confused. A study of the line of variation in diphtheria is important in guarding the physician against an over-confidence in measures that for a while only are apparently successful, and an incentive also to persistent effort, looking to the better control of this malady when the disease reappears in its more dangerous and malignant form. The best obtainable statistical information at the present time indicates a wonderful reduction in the mortality from diphtheria by the use of antitoxin, as I will proceed to show, giving results prior to and since the antitoxin period :

	Years.	No. Cases.	Mortality Percentage.
New York City, pre-antitoxin period,	1889-1894	35,944	28.03
New York City since pre-antitoxin period,	1895-1900	62,902	14.32
State of Massachusetts, pre-antitoxin period,	1891-1894	13,332	28.30
State of Massachusetts since pre-antitoxin period,	1895-1898	26,470	15.00
Philadelphia, pre-antitoxin period,	1888-1894	19,828	31.07
Philadelphia since pre-antitoxin period,	1895-1899	21,489	67.02
London Metropolitan Asylum Board Hospital, pre-antitoxin period,	1888-1894	11,598	30.30
London Metropolitan Asylum Board Hospital, since pre-antitoxin period,	1895-1899	29,055	17.00

The average of a group of nine other sets of statistics of pre-antitoxin mortality, in this country and abroad, shows a mortality of 41.8 per cent. In October, 1895, the Chicago health department took over the treatment of diphtheria among the poor and destitute of that city. During the five years previous to that time there had been an aggregate of 7,411 deaths from diphtheria, or an annual average of 1,482 deaths. Between October 5, 1895, and December 31, 1900, the health department treated 5,727 cases of bacterially verified diphtheria, with the following results: Treated on first day, 476; second day, 1,426; third day, 2,034; fourth day, 1,037; later, 754. Mortality per cent of those treated on first day, 0.42; second day, 1.54; third day, 3.59; fourth day, 11.38; later, 23.1. Total deaths, 389; cases intubated,

585; intubated cases recovered, 417, or 71.29 per cent (per cent died, 28.71). Number treated with immunizing doses of antitoxin, 4,831; cases subsequently attacked, 25 (all of which ultimately recovered). Per cent of immunized cases subsequently attacked, 0.51. In the under one-year-of-age period the death-rate was 11.9 per cent; between one and five years, 3.6 per cent, or more than one fourth less; between five and ten years, 5.9 per cent, or one half less than first period; among those over ten years of age, 2.6 per cent, or nearly 80 per cent less than the under-one-year-of-age rate. These figures show the effect of increasing age, and of consequent increasing powers of vital resistance in reducing the chances of death from diphtheria.

Reference to the reports of the St. Louis health department show that from 1889 to 1895—being the six years preceding the introduction of antitoxin—there were 4,697 cases of diphtheria in that city, with a total death-rate of 1,436, or a mortality percentage of 30.57. During the time intervening 1895–1900, a like period, they experienced a total death-rate of 12,661 from this disease, which were bacterially verified as such. These cases were all treated with antitoxin, the dosage ranging from between 500 to 15,000 units. Of this number 1,661 died, or 13.11 per cent. During the last year of this time the mortality rate fell to 6.46 per cent. Tracheotomy was performed in four cases, with three deaths resulting, or 75.20 per cent; sixteen were intubated, with six deaths resulting, or 37.50 per cent. Of those treated on the first day of attack, 1.98 per cent died; second day, 4.50 per cent; third day, 7.86 per cent; fourth day, 8.89 per cent; fifth day, 15 per cent; seventh day, 50 per cent; ninth day, 100 per cent. Complications accompanied 112 of these cases, as follows: Paralysis of muscles of speech, 4; severe joint pains, 1; rash, 13; slight paralysis of throat, 2; slight nephritis, 6; pneumonia, 1; urticaria, 19; abscess at site of injection, 2; albuminuria, 4; bronchitis, 3; pharyngeal paralysis, 2; heart failure, 7; slight erythemia, 3; slight paralysis of arms, 1; mumps, 3; slight urticaria and paralysis, 1; slight paralysis of optic nerve, 1; intense abdominal pains, 1; congestion of kidneys, 2; adenitis, 1; erythemia and paralysis of vocal cords, 1; septicemia and heart failure, 2; abscess of left tonsil, 1; slight joint pains, 1; paralysis of throat and eyes, 1; slight ptosis, 1; gastro-enteritis, 1; hysteria, 1; myocarditis, 1; pneumonia and bronchitis, 1; neurasthenia, 1; mitral insufficiency, 1; asphyxiation, 1; general heart paralysis, 1; partial paralysis of legs and arms, 1; diphtheritic conjunctivitis, 1; paralysis vagus, 1; gangrene of mouth and

throat, 1; measles, 1; dyspnea and aphonia, 1; rickets, 1; facial paralysis, 1; paralysis of ciliary muscles, 1; urticaria and arthralgia, 1; convulsions and erythema, 3; scarlatina, 2; stiffness at joints, 1; paralysis of pharynx and legs, 1.

In the city of Boston, during the five years preceding the antitoxin period, there were 8,143 cases of diphtheria reported, with a total death-rate of 2,340, or a mortality percentage of 28.7. During the five years since the introduction of antitoxin next preceding the time referred to there were 16,480 cases reported, with 1,589 deaths, or a mortality percentage of 12.07.

It would seem unnecessary to further prolong this paper with statistics on this subject of like character—which are abundant and easily obtainable—showing the curative properties of antitoxin, and in this connection I wish to give full credit for the information I have gleaned from whatever source and used in this paper.

It may doubtless be of some interest, and perhaps profit, to inform the Society as to the results obtained in our own immediate city with antitoxin and without its use in diphtheria during the time intervening August 1 and December 1, 1901. Commencing with the first-mentioned date diphtheria appeared in our midst in epidemic form, no portion of the city being entirely exempt; the disease prevailed most, however, west of Fourth Street, but more particularly west of Twelfth Street. During the time mentioned there were 525 cases reported to the health department. In order that I might obtain all the information possible concerning the cases so reported, together with the treatment of the same, I addressed each of the one hundred and fifty reporting physicians a letter which read as follows: "For statistical purposes, and for the better information of our immediate profession as to the virtue of diphtheria antitoxin, will you kindly fill out the enclosed blank and return same to me in self-directed stamped envelope?" It became necessary to follow this letter with two others of a similar character before receiving a respectable number of replies.

I finally received answers from one hundred and one physicians, embracing reports on four hundred and two cases, and herewith give you the data thus obtained:

Total number of cases reported,	402
Total number of recoveries,	364
Total number of deaths,	38
Total number treated with antitoxin,	343
Total number treated without antitoxin,	59
Total number of deaths occurring in cases treated with antitoxin, twenty-five, or 6.8 per cent.	
Total number of deaths occurring in cases not treated with antitoxin, thirteen, or 22 per cent.	
Total number of cases of intubation where antitoxin was used, seventeen, with eight deaths occurring, or 47 per cent.	
Total number of cases of intubation where no antitoxin was used, four, with three deaths, or 75 per cent.	

I regret exceedingly my inability to give definite data as to the time antitoxin was administered in these cases, which is impossible by reason of the fact that the reporting physicians failed to clearly answer the question, "Day antitoxin was administered?" Quite a number of the reports did show, however, that in many instances where death occurred the physician was not called until the fourth or fifth day after the attack, and that the patient was hopelessly diseased when injected, death ensuing within a few hours. The kinds of antitoxin used in these cases were distributed as follows: Mulford's, 126; Park, Davis & Co.'s, 97; Stearn's, 80; Milliken's, 15; not stated, 25. The sequelæ as reported in these cases were as follows: Abscess at site of injection, 2; abscess right side, 1; acute articular rheumatism, 2; cardiac paralysis, 7 (all died); facial paralysis, 2; general paralysis, 3 (one death); post-paralysis, 2; paralysis of throat, 1; paralysis right side, 2; both legs, 1; left arm, 1; pharynx, 2; muscles of eyes, 1; soft palate, 1; total suppression of urine, 2 (both died); swelling of ear and chin, 1; valvular disease of heart, 1; enlargement of glands of neck, 1; marked disturbance of vision, 1; marked nasal sound in speech, 4; pneumonia, 2 (one death); strangulation, 1 (death ensuing); total, 41. During the first month of the epidemic the mortality rate reached 25 per cent, after which it gradually diminished.

This excessive mortality may be accounted for in several ways. Virulency, error in diagnosis, neglect to bacterially verify the disease and consequent failure to use antitoxin, may all have played a part. The failure to use this remedy was, in many instances, due to the fact that the poor were unable to procure the serum for some time. The health department was finally, and for the first time, enabled to supply it gratuitously, which may have been a factor in the diminution of the mortality; there was a decline in mortality rate thereafter.

Prior to August 31, 1898, no record seems to have been kept of reported cases of contagious or infectious diseases of any character by the health department of this city, but it is evident that diphtheria had not prevailed to any great extent for some years prior to this outbreak, as is shown by the mortality record. Beginning with the year 1898—the time when a record of these diseases was begun to be kept—we find for 1898-99 the mortality was only 1.37 per cent, as occurring in one hundred and eighty-nine reported cases; 1899-1900, 1.62 per cent, in one hundred and sixty cases; and for the fiscal year, up to August 1, 1901, it was 1.67 per cent, in three hundred and seventeen reported cases. These figures are in striking contrast with the mortality rate under consideration. It should be remembered that croup is not included in these estimates, it not being a reportable disease at this time. Unquestionably, membranous croup is caused by the bacillus of diphtheria invading and growing in the larynx in at least 99 per cent of these cases, and should be included as a reportable disease and also in all estimates of mortality percentage of diphtheria.

The statistics herein given—which we must regard as being as trustworthy as is the information on any other subject of a medical nature which may be gleaned from scientific medical sources—would seem to establish the fact that the mortality from diphtheria has been considerably reduced, and may be still further lessened by the use of antitoxin, but that in order to accomplish this result the time of introduction and the quantity and character of serum used is, beyond all question, of the most vital importance. The good results hitherto attained by the use of antitoxin in diphtheria must be conceded, and attributed, primarily and most importantly, to the prompt administration of the remedy in full strength and quantity. While the early bacterial diagnosis of every case is of prime importance, yet in the presence of suspicious symptoms no time must be lost, even to secure a bacterial diagnosis, before the injection of antitoxin. Frequently, when the clinical symptoms do not yet point to diphtheria, the microscope will reveal the presence of the bacillus. There is a divergence of opinion among some of the most scientific men of the country as to the proper amount of antitoxin to be administered, the majority of whom, however, seem to favor very much increased doses over the amount usually given two or three years ago, some advocating the use of as much as thirty to sixty thousand units in very severe cases, especially if of a laryngeal nature.

Dr. William H. Park is more conservative as to dosage. He maintains that in mild cases one thousand to fifteen hundred units is sufficient for the first dose; for moderately severe cases, from two thousand to three thousand units; very severe cases, four thousand to six thousand units for the first dose. He recommends that if, after twelve hours from the first injection, the inflammation has not clearly begun to subside by lessened swelling and congestion, a second, and even a third, large dose should be administered.

To my mind, there can be no fixed rule as to dosage, the amount of antitoxin to be used depending upon the mildness or severity of each individual case. I believe very large doses are not only justifiable, but decidedly advisable in all cases where the patient is not seen for four or five days after the initial symptoms have appeared.

It is extremely important to use no antitoxin unless it is prepared by a known firm of competency and integrity. The serum should come from perfectly healthy animals, which have remained healthy during their period of immunization, and which have in their blood a sufficient concentration of antitoxin. The importance of immunizing exposed children with from five hundred to one thousand units of antitoxin is manifest. Immunization, isolation, and proper fumigation are the preventive measures which should always be practiced, but as it is foreign to the purpose of this paper to deal with preventive means I will not now discuss how this may be accomplished.

The recent unfortunate results which attended the use of diphtheria antitoxin in a neighboring city suggests the propriety of the national government taking over the control, not only of this special antitoxin, but all analogous products, at least to the extent of periodical inspection of the laboratories and farms where serums are produced. Stringent laws have been adopted and put in force in many European countries relating to the preparation, sale, and distribution of therapeutic serums. Germany, Italy, Russia, and France all have such laws and rigidly enforce the same. The French restrictions are the most exacting, which may be presumed from an extract of their law on this subject which reads, "Attenuated viruses, therapeutic serums, modified toxins, and analogous products applicable to the prophylaxis and therapeutics of contagious diseases, and injectable substances of organic origin, of undefined chemical composition, applicable to the treatment of acute or chronic affections, shall not be marketed under an actual or trade name until they shall have been, in point of view of manufacture

and origin, the recipient of a governmental authorization, rendered according to the judgment of the consulting committee of the Council of Hygiene of France and of the Academy of Medicine. These products will be granted a temporary or revocable license only, and shall be subjected to an inspection to be made by a commission appointed by a minister having competent authority." Severe penalties are provided for violations of any of the provisions of this law, or similar laws in effect in the countries above referred to.

The antitoxin treatment of diphtheria belongs to the domain of preventive medicine not less distinctly than does vaccination against smallpox, and of this latter it has been said that "the lancet of Jenner has saved more lives in the last hundred years than have been destroyed by the sword, and more treasure than the cost of all the wars of the period." The exact *modus operandi* of the action of diphtheritic serum on the organism is not yet fully understood, but we do know that the serum-therapy theory had its origin in the studies of immunity to infectious agents which, as we learn, was first achieved by Salmon, Smith, Behring, and Kitasato.

It is asserted by McFarland, of Philadelphia, in a recent article, that immune serums operate chemically to produce their effects. He claims that the experience of a large number of trained observers go to show that the injection of normal serums has been followed by improvement in various diseased conditions, and that this can in part be explained upon the assumption that there is supplied to the blood some intermediate or compensatory substance essential to the proper performance of physiological function, but which is temporarily deficient. Metchnikoff, he states, has found that the introduction of any kind of cellular tissue into the body increases the ability of the blood to act destructively upon that kind of tissue. Thus, if blood of one animal is injected into another, its serum becomes hemolytically active. If comminuted epithelium is introduced, the serum becomes epitheliolytic in its tendencies.

McFarland states that from the lessons that are to be learned from the achievements thus far consummated, the action of immune serums is far from simple, depending upon many factors with which we are just beginning to become acquainted, and that the failure of our efforts in many directions in the past may simply be referable to our ignorance of how to use materials at hand. The investigations now going on in this direction under the supervision of numbers of men of high scientific knowledge must soon give us clearer light on this subject.

Notwithstanding the distrust still existing in the minds of many medical men as to the virtue of antidiphtheritic serum, and the consequent want of confidence on the part of parents, I believe its use in this disease will continue to grow in favor, and that both its curative and preventive properties will be further and further demonstrated. One of the brightest minds that has ever adorned the medical profession, and a former opponent of antitoxin, has this to say of its use, after carefully studying the results obtained in the hospitals of Europe: "All theoretical considerations must give way before the brute force of these figures, and I consider it the duty of every physician to use a remedy giving such clinical results."

With the light now before me, I am myself as thoroughly convinced of the innocuousness of diphtheritic serum, under all circumstances, as I am of its specific antidotal effect upon the toxine of the Klebs-Loeffler bacillus, thus concurring in the opinion now entertained by the most advanced medical thought of the day regarding this subject.

If there be an excuse necessary for the submission of a paper concerning diphtheria—a subject that has so frequently been presented—it lies in the fact that a disease which yearly carries off multitudes of children, and which in most large cities stands second or third in its mortality rate, particularly where antitoxin is not generally used, should continuously command the most earnest attention of the entire medical profession, but more especially of a body who is honored with so many men of such a high order of scientific medical attainments as is comprised within the membership of this Society.

LOUISVILLE.

THE GALL-BLADDER.

BY J. LIVELY JOHNSON, M. D.

It may appear presumptuous to declare to the profession that diseases of the gall-bladder are as numerous as diseases of the vermiform appendix. Many severe cases of disease of the gall-bladder are accompanied by the most obscure symptoms. The idea that every case of gall stones produces jaundice is absurd, as we rarely find icterus in gall-bladder cases, but find this condition produced by closure of the cystic or common ducts, from whatever cause. This may be due to a stone in its attempt to pass from the gall-bladder, or pressure from tumors, etc.

In a recent case it was demonstrated that gall stones may exist for a long period without any symptoms whatever. The patient, a man sixty-five years of age, had not presented a symptom of gall stones until two days prior to operation. The gall-bladder, when opened, was found to contain three stones the size of a partridge egg, well faceted, indicating that they had been in existence for many years.

Again, cholecystitis without an accumulation of pus may be present, with unimportant symptoms, until the appearance of a temperature, accompanied, as it invariably is, by a temperature angle. The temperature angle is due to sepsis, this in turn arising from an accumulation of pus in the gall-bladder, a condition demanding operation.

I believe many cases of dyspepsia are due to gall bladder diseases, and may be relieved by opening the gall-bladder, removing the offending substance, and instituting efficient drainage until the mucous membrane of the gall-bladder has resumed its normal state, when the drainage-tube is removed and the bladder allowed to recede and close.

The majority of enteroliths are due to gall stones acting as a nucleus. There are cases on record where the enterolith has grown by successive layers to the size of an egg or an English walnut, and in some instances completely occluding the bowel, necessitating a laparotomy for the removal of the stone. "It has been found by Leichtenstern that in 1,541 cases of obstruction of the bowels from different causes that forty-one cases, or 2.7 per cent, were due to gall stones."

It was stated by Rokitsausky that gall stones as large as an egg could pass through the bile-ducts, but it has long been known that such large stones pass from the gall-bladder into the intestines by ulcerating through the gall-bladder, thus escaping into the intestinal canal.

Senn reports a case of obstruction of the bowel due to a large gall stone which was removed by enterotomy, with speedy recovery. Campenon operated twice and Körte four times for the same trouble, with 50 per cent of mortality. In these cases the symptoms were severe and the obstruction complete.

Wising reports fifty-one cases of obstruction of the bowel from gall stones, in only twenty-four of which could the anatomic condition of the gall-bladder be ascertained. The post-mortem demonstrated that the calculus had entered the bowel by a process of ulceration. In thirty-three of the cases the jejunum was obstructed twelve times, while the ileum was the point of obstruction twenty-one times. Jaundice rarely occurs, but the prognosis is very grave, as out of the fifty-one cases reported by Wising thirty-eight died.

It is the opinion of surgeons that the lower portion of the ileum is the seat of obstruction in 50 per cent of the cases. A case by Wising in a lady seventy years of age, and who had never suffered from biliary colic or jaundice, demonstrates that a large stone may ulcerate through the gall-bladder into the intestine, the patient dying five days later. In obstruction of the intestine from impaction of gall stones the bowel is very much dilated above the seat of occlusion, and very much contracted and flaccid below. It is a well-known fact that in many instances a biliary calculus may remain in the intestinal canal for a long period without obstructing the bowel, the feces passing beside it, until the enterolith has increased to a sufficient size to prevent further passage of the bowel contents.

Woodbury reports a case in a woman sixty years of age who was seized with symptoms of intestinal obstruction, with no previous symptoms of gall-bladder trouble, but who died on the seventh day. The necropsy revealed a biliary calculus the size of an English walnut firmly impacted in the upper portion of the jejunum.

In my own practice Mrs. H., fifty years of age, was suddenly seized with what appeared to be biliary colic, which lasted for several hours despite large hypodermic injections of morphine. Two days later she passed three enteroliths, two of which were the size of an English walnut; the remaining one was an inch in diameter and two and one half inches in length. The stones had the appearance of having been lodged in the intestinal canal for a considerable time. Prior to the passage of the stones the patient had several severe hemorrhages from the bowels, which almost completely exhausted her. The patient had

recurring hemorrhages for about one year, since which time she has regained her usual state of health, having at no subsequent time been disturbed by symptoms of gall-bladder disease.

I believe in cases of acute obstruction of the bowel, where we can not account for same, we may well attribute the cause to gall stones; I also believe in such cases we should open the abdomen at once to confirm our diagnosis, as well as to do the best thing for our patient. I do not believe we are justifiable in subjecting our patient to the expectant plan of treatment in this class of cases; consequently, as soon as diagnosis of gall stones is made I believe the gall-bladder should be opened and relieved of its contents, drained, and allowed to close.

LOUISVILLE.

GASTRIC LAVAGE.

BY H. H. ROBERTS, M. D.

Experience is essential to thoroughly grasp the true meaning and use of any one thing; however, the most experienced prefer to share responsibilities with some one who has given the matter more exhaustive study than himself. There are always two ways in which a special and scientific treatment can be utilized—the blind and mechanical, and the conservative and intelligent. In the former instance, the user of an instrument or treatment follows certain rules laid down either in books or in the imitation of others; in the latter case, the user is constantly verifying, modifying, watching results, selecting cases for treatment, and using that care and good judgment which is ever essential to the scientific achievement of success.

Enthusiastic and careless followers of many lines of treatment abuse them so much that either the patients are prejudiced against the use of them, or irreparable harm is done in many cases. Possibly there is nothing in the treatment to-day of gastric diseases which is more abused than gastric lavage. Many use it because it has been recommended, others because of its moral effect on the patient, and still others because it is a popular fad. This craze has reached the laity, and we find patients buying their own tubes and not only washing out their own stomach, but even their friends' and neighbors', greatly to the detriment of all. However, this is not the most deplorable condition of

affairs, for the patient does not know any better; but take the operator who washes all kinds of stomach disorders without regard to physical examination or chemical analysis, making perhaps a crude test for HCl.

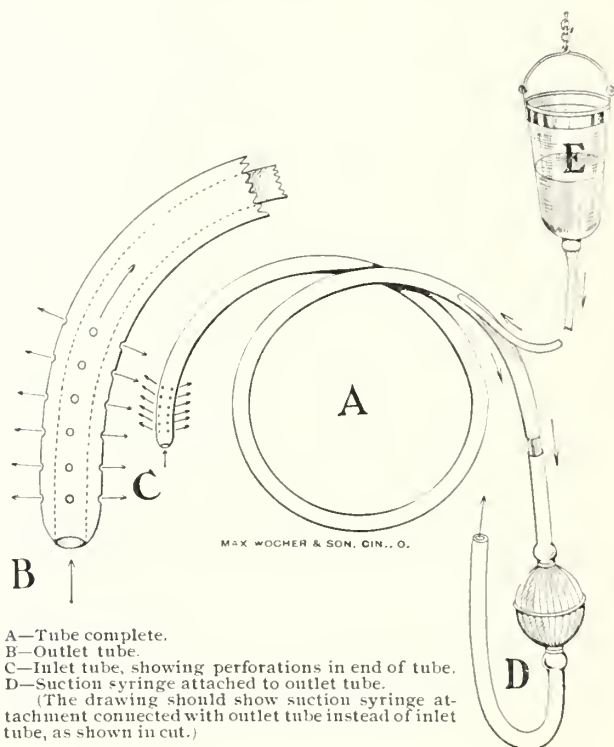
The act of washing a patient's stomach has in many cases a wonderful effect; he is amazed at such an extraordinary trick, and relates the incident with a most graphic description of how the doctor ran a foot and a half of gum tubing down his esophagus. So important and essential to stomach treatment has the laity been led to believe the use of the stomach-tube is that I frequently find they inform me, even before an examination has been made, that they have had their stomach washed. In many of the acute disorders gastric lavage is almost indispensable, and much good can be done and comfort given to the patient. Consider the lamentable effect of the filling and over-distention by the use of lavage in the chronic cases, such as gastroptosis, gastrectasis, gastrohelicosis, erosions, etc. Could there be any thing more harmful than thus adding insult to the already congested and inflamed tissues by this excessive weight, lacerating the tender fibers, producing in many cases numerous small hemorrhages of the mucous membrane, and causing a shock to the nerve-supply of this important organ?

These are cases which suffer the greatest, as large quantities of fluid are necessary to fill the stomach and get the siphon effect necessary to establish the return flow. I saw a case where the patient said it took a gallon of water to fill her stomach, and the doctor had to use an extra long tube, as she had a large stomach. Fluid was added doubtless until the stomach rested upon the symphysis pubes, and could go no farther.

Gastric lavage is seldom required, and certainly never as a routine treatment. In some cases, where there are large quantities of material in the stomach, lavage may be used to remove this material preparatory to further treatment, but not as a cure. Injury is not only caused to the muscular and nerve tissues, but of greater importance is the glandular supply.

In cases where there are large quantities of mucus present the suction syringe will suffice; water will not remove the mucus, but increases the flow by the irritating effect of lavage. Under no circumstances should lavage be used where there is presence of blood in the return wash, or where there has been a recent hemorrhage, and never until the most

careful examination has been made of the chest. Penzoldt reports a case that was to have had gastric lavage used the next day; for some cause the patient did not come. That afternoon the patient died suddenly from the rupture of an aortic aneurism into the esophagus. Where there is presence of blood in the return wash it shows plainly that either there is some grave lesion present or injury has been produced by the tube.



Believing that much harm has been done by the use of the commercial stomach-tube in gastric lavage, and to accomplish the greatest benefit with the least possible danger, I have devised and had constructed for me by Messrs. Max Woche & Son, of Cincinnati, Ohio, a special double-current stomach-tube, to be used in cases where lavage is indicated. The tube consists of an outer and inner tube; the outer tube is the inlet, the inner tube the outlet. The outer tube being thin and elastic the fluid enters by means of gravity, producing fine jets or spray upon the stomach wall from the small perforations in end of tube, distributing the fluid to all parts of the stomach at the same time. This prevents any shock, and acts as a mild stimulant to the muscular

tissues. The outlet tube is firm and large enough to allow the quick return of the wash, preventing any possible danger of over-distention. The continuous flow of the fluid in and out removes all particles from the stomach quickly and without discomfort to the patient.

Gravity is regulated by the height of the percolator; eight or ten feet is sufficient. The suction syringe attachment is for the purpose of removing mucus and facilitating the flow where there are large quantities of material present, as in ischochymia, etc. The tube can be used for irrigating cavities, empyema, cystitis, intestinal troubles, etc., using tubes of different caliber for each case.

Where gastric lavage is indicated, I feel that the above tube will afford a safe and speedy method of accomplishing this treatment, when used with that care and caution which should guide every earnest and scientific worker.

LEXINGTON, KY.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, March 11, 1902, S. G. Dabney, M. D., President pro tem, in the Chair.

Case of Appendicitis. Dr. J. R. Wathen: This specimen is an appendix which I removed from a gentleman thirty-six years of age, referred to me by Dr. Bennett last Saturday. The man was complaining of pain in the region of the appendix for several days, and it was impossible to obtain a movement of his bowels, although he had been given large doses of salts, calomel, and various remedies for this purpose. He had only a slight elevation of temperature. There was a fair amount of pain; it was not intense, and the chief symptom for which I operated was obstruction of the bowels. I feared that it was a case of intussusception. I made an incision in the neighborhood of the appendix and found this region greatly inflamed, a good many adhesions, and the appendix was adherent to the intestines. I removed the appendix, which is quite long, as you will see, and the third day after the operation the patient's bowels moved freely and he is getting along nicely. I merely present the specimen for your con-

*Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

sideration, it being very much elongated; the pain was slight in proportion to the obstruction of the bowel which appeared to exist.

Discussion. Dr. J. W. Irwin: About the only thing I can say is that the patient is now without an appendix. The specimen shows that there is some little engorgement of the blood vessels. It is an interesting case. If reflex disturbance, due to adhesions about the appendix, caused obstruction of the bowels, the case is certainly worth recording.

Dr. J. R. Wathen: I think the adhesions present in this case were due to the inflammation, and from reflex disturbances there was almost complete paresis of peristalsis. In looking up the literature, I find few allusions to such a condition. The obstruction, in most cases, seems to be mechanical, or due to the amount of inflammation present, not so much to nervous or reflex disturbances as in this case. A similar case was operated upon by Dr. W. H. Wathen within the last six weeks. These two cases occurring within a short time of each other attracted my attention to the subject particularly. They are the only cases I have seen of this nature.

Enlarged Liver and Spleen: Continued Report. Dr. G. B. Young: At the meeting of this Society one month ago I exhibited a boy with an enlarged spleen and liver. As will be remembered, at the time most of the members, in discussing the case, thought that his hemoglobin would be found not greater than 50 per cent. I examined his blood the next day and found the hemoglobin fully 90 per cent. So far as I could determine his blood showed nothing abnormal; there were no indications of leukemia. I still have him in the Marine Hospital under treatment, and think his spleen is slightly smaller than it was. His color remains the same (jaundice) and every now and then he has an attack of nausea and vomiting. His temperature remains normal, appetite good, bowels loose; he has, on an average, four actions in the twenty-four hours.

I have been driven to the conclusion that his peculiar color is, if I may be allowed the expression, a "normal abnormality"; that it is hepatogenous, was never hematogenous; that the pigmentary deposit in the skin has become permanent; that it does not depend upon his present condition, but is due to antedating, prolonged jaundice.

Dr. T. P. Satterwhite: I remember having seen the patient referred to, and would like to ask Dr. Young whether, in his further observation of the case, he noticed any cardiac disease?

Dr. J. W. Irwin: I examined the patient referred to, and found that his heart was not dilated, but he had a mitral murmur, due to a mitral stenosis. My opinion was that his condition was due to chronic malarial cachexia, and I so stated at the time. I am glad that Dr. Young, in his continued investigation, has found that it is not a case of leukemia. That a pseudo-leukemia might follow malarial infection there is no doubt. I stated that he had a mitral murmur which might be in part due to anemia. This may also account for the capillary circulation being so much blocked.

Dr. G. B. Young: The consensus of opinion, when the patient was before the Society, was that the heart murmur present was due to anemia, but the blood examination showed no evidence of marked anemia, so the murmur is probably not functional. Dr. Cheatham stated that he found the optic nerves very pale upon examination with the ophthalmoscope. The boy reads a great deal, and has developed no symptoms referable to his eyes.

Tubercular Meningitis. Dr. H. N. Leavell: A case of rather more than ordinary interest appeared at the clinic of the Hospital College of Medicine last Wednesday. A child two and a half years old gave about the following history: She had chronic suppurative disease of the middle ear, which had existed for some time; she had been improperly fed for several consecutive months; in fact, had been given everything that the parents (German people) had been eating—kraut, cold lunches of all kinds, beer, etc.; as a result, the child developed diarrhea, having three or four actions daily, which had continued for several months.

On the Sunday evening preceding the Wednesday at which she appeared at the clinic the child had eaten with unusual heartiness, and her bowels had not moved on Monday or on Tuesday. The student who was in attendance gave a mercurial purge, one tenth grain of calomel every hour until ten doses had been taken, followed by castor oil, which produced only one evacuation.

The child presented herself at the clinic in a perfectly apathetic condition; there was no pain referable to the stomach, and nothing attributable to a stomachic disorder except the sudden cessation of activity of the bowels. Dr. Dabney examined the little patient, and on account of the history of a non-painful perforation of the drum membrane, long-continued emaciation, slight elevation of temperature

and apathetic condition, he made the probable diagnosis of meningitis following tubercular otitis.

The case went along without any alarming symptoms for a few days, and on yesterday the student in attendance asked me to see the child. I found considerable protrusion of the eyeballs, strabismus, bulging of the fontanelles, the cerebral touch, as it is called—that is, when the abdomen was stroked with the finger nail, three or four minutes afterward a distinct redness developed, which continued for several minutes; there was some little exaggeration of the reflexes. These symptoms led to a positive diagnosis of meningitis.

The point of interest was whether this was of tubercular origin, of intestinal origin, or absorption of toxins from the otitis media. The history of the case would lead us to suppose it was due to a tubercular condition. On the other hand, the sudden cessation of activity of the bowels, preceded by an unusually voracious appetite and diarrhea, would lead us to suspect that the condition might be of intestinal origin; the meningitis might be due to conditions entirely idiopathic, but the preponderance of evidence is in favor of tubercular origin. The rather suddenness of onset is a matter of interest. In those cases of tubercular origin we usually expect them to be insidious in their development. On account of these interesting factors I thought the case worth reporting.

Discussion. Dr. S. G. Dabney: The child was brought to the clinic last Wednesday afternoon. I was struck with the child's appearance as it lay in its mother's lap; we all know how sometimes we make guess diagnoses, and it happens in this case, I believe, I guessed right. The child was entirely apathetic; I did not have with me an ophthalmoscope, in order to examine the interior of the eyes, but the child had a curious stare; it had no retraction of the head; no convulsions; no pupillary symptoms; the temperature was 99.5° F. There was a history, however, of progressive loss of weight, and when the mother said this, I looked at the child's face and was a little skeptical, but when I looked at the child's legs and body I found they were greatly emaciated. The mother told me that the child had had a "running from the ear" for some months; there had never been any pain or ear-ache; but these two symptoms, progressive emaciation, followed by painless suppuration of the middle ear, together with the peculiar appearance which the child presented at the clinic, led me to

the conclusion that it was probably a case of tuberculous disease of the middle ear followed by meningitis. Whether the meningitis was originally tubercular, or whether it was caused by the otitis media, is a question; I think it is the result of the middle-ear disease. I examined the ear closely and found the auditory canal blocked up with a considerable mass of granulation tissue; I curetted that out thoroughly, so as to make good drainage. There were no mastoid symptoms, no tenderness that could be elicited on deep pressure over the mastoid, no sinking in of the upper and posterior wall of the auditory canal, no profuse discharge. I did not see that there was anything to be accomplished by operative treatment upon the ear beyond making good drainage through the canal. I thought the probabilities were that the meningitis had resulted from the suppurative otitis media, and that the meningeal involvement came through the roof of the tympanum, or the labyrinth, rather than through the mastoid process. There had been no previous treatment, although the mother had noticed the progressive emaciation and the painless discharge from the ear for some months.

We might have examined the discharge from the ear with the microscope to see if the Koch bacillus was found. I have done this in several cases in private practice, generally with a negative result, though the subsequent tubercular character of the case became plainly manifest. Recently I have had a case in a young married lady in this city who had a similar ear trouble characterized by a painless discharge; her appearance is typical of tuberculosis. The microscope showed for a long time a negative result, but finally the Koch bacillus was found, and physical signs appeared in the lungs also. She spent last summer in the Adirondacks, but there has been no marked improvement.

Dr. William Cheatham: Do you not think that a painless discharge from the ear in childhood is of as much importance as it is in the adult? I see a great many children with painless suppurating ears which are rarely found tuberculous; the microscopic examination is usually negative. I do not believe this symptom is of much importance in the child, where the bones and tissues are soft and perforate so easily. I operated upon a case of middle-ear disease two weeks ago; it had perforated the mastoid and showed externally; when I went to cut down upon the abscess my knife slipped down into the bone; the child had no pain, yet I do not believe it is tuberculous.

Dr. J. W. Irwin: The case reported by Dr. Leavell is of so much interest as to require some little attention. Such cases are met with

occasionally. One observer has published two hundred and eighty-three cases of this kind, and I believe out of the two hundred and eighty-three cases eighty-three were due to one cause, and occurred in children under the age of five years. When there is swelling over the eyes, protrusion of the eye-balls, protrusion of the fontanelles, with no swelling in the mastoid region, we can judge that the trouble is mainly confined to the cavernous and superior longitudinal sinuses. In thrombosis of the sinuses of the dura mater it very frequently happens that the conditions named by Drs. Leavell and Dabney are present. First, the anemia; second, a lowered condition of the blood pressure; third, the suppurative process in the internal ear, and it often happens that the bone in this region is very thin or absent, and it is possible for the germs to find their way through and cause meningeal affections. In this there is feeble action of the heart and all the conditions tending to the formation of a thrombus. In thrombosis of the cavernous sinus there is always protrusion of the eyeballs, oftentimes some swelling around the eyeballs, and sometimes abscess of the orbit, and when the superior longitudinal sinus is involved there is protrusion of the fontanelle. This condition of the sinuses may bring about a local meningitis. Quantities of leucocytes may find their way into the sinuses, and may even aid in the formation of a thrombus. The symptoms in the case came on suddenly, without any history of tuberculosis. In tuberculosis the symptoms do not occur so suddenly; it usually takes from three to eight weeks for the patient to develop violent symptoms of tubercular origin, and I am inclined to believe that the cause in this case is non-tubercular, and that it is in some way connected with the suppuration of the middle ear. When the case comes to an autopsy I think you will find thrombosis of the dural sinuses—of the cavernous and superior longitudinal sinuses—with probably some local patches of inflammation. You may find edema and some patches of softening; you may find a few minute abscesses or a single abscess.

Dr. S. G. Dabney: First, in regard to septic thrombosis: It is generally attended with very sudden and marked fluctuation in temperature. However, I recognize that this might be absent.

Possibly I have been misunderstood: I did not try to leave the impression that the meningitis was tubercular from the suppurative otitis media, although the middle-ear trouble itself is probably tubercular, judging from the history, appearance of the child, progressive emaciation, etc. The child has been sick for three or four months.

Before the ear trouble began it was an ill child, and that was what led me to believe that the trouble was tubercular, taking into consideration the progressive emaciation, etc. Whether there has been a thrombosis is doubtful, because of the absence, so far as we have been able to detect, of any elevation of temperature; it is possible if this child had been in an infirmary, and the temperature taken several times a day, we might have found it at intervals 104° F. or thereabouts, with sudden fall and rise.

My experience has been that in ordinary suppurations about the middle ear there is pain in the beginning, but of course not later. Taking the entire painless character of the suppuration in this case, with no elevation of temperature, with the intense emaciation, the existence of the illness for several months, I would be strongly of the opinion that it is tubercular. Of course, the diagnosis must be presumptive at best.

Dr. H. N. Leavell: This case shows the importance of observation from different sides. I think many general practitioners (like myself) would be likely to slip up on the diagnosis in a case of this kind unless he had an examination of the ear made by a man who was decidedly more competent than himself. I would have been led to believe that this child's emaciation was produced primarily from its improper feeding, and that this sudden cessation of activity of the bowels was in the nature of a paresis, and that the child would improve shortly after its bowels had been moved. It shows the importance of having examinations made from all the various standpoints. The preponderance of evidence appears to be in favor of meningitis, of tubercular origin.

The child has been given ten grains of bromide of strontium every two hours, with ice caps to the head, etc.

The essay of the evening, "Diphtheria," was read by M. K. Allen, M. D., health officer of the city of Louisville. [See p. 281.]

Discussion. Dr. Ewing Marshall: The subject of antitoxin has interested me ever since its first promulgation, and I have endeavored to satisfy myself as to its value. First, I had been taught the theory laid down by Welch and others, that the serum of one animal when introduced into another animal proves injurious, and this made me very skeptical about the antitoxin theory. Then comes the question

as to whether statistics prove anything. We know statistics are very easily doctored. They are dangerous things to argue against or argue by. The claim is made that we can not delay the use of antitoxin until we know that we have diphtheria to deal with, as by so doing the favorable time for its administration passes, that it is then too late to get the benefit from antitoxin—we must give it before the disease has produced these bad effects. We can not wait until we know what we are treating, because no man, I do not care what may be his ability, will announce that he can make a diagnosis of diphtheria on the first day, in the majority of cases. If a man is disposed to follow the custom laid down by some observers he will take every case with a deposit of any kind in the throat and use antitoxin. That seems rather severe. It seems an expensive plan of treatment, to say the least, and it is a hardship to call into practice the use of antitoxin in every case of throat involvement.

Then again, as to the use of antitoxin as an immunizing agent, I think it is very questionable whether we should use such an expensive remedy in every member of the family that has been exposed to diphtheria. Not infrequently we see one case of diphtheria in a family where there are a number of other children, as well as grown people, who are all exposed to the disease, yet no other case develops. If we were to use antitoxin for immunizing purposes in such instances as this, we would say positively that we had conferred immunity on those members of the family who did not develop the disease after having been exposed. I have rarely seen more than one case of diphtheria in a family.

Dr. G. B. Young: In regard to the points raised by Dr. Marshall, I think he is going a little too far when he says that other members of the family do not have diphtheria because they present no tangible clinical symptoms of it, because we have been taught that the "walking" cases, those which present no tangible symptoms, are essentially the ones which are a source of menace to the community at large, children, for instance, going to school, riding on street cars, etc. And it is said by those who are competent to know that in a great many instances, although other members of the family present no tangible clinical symptoms, a careful bacteriological examination of their throats will show presence of the bacilli. I recall one instance in which I had occasion especially to notice this. A case of diphtheria developed in a family where there were four other children; at that time I was doing

some work in that direction in the laboratory at Washington; I saw this case and injected antitoxin, that is, in the initial case, and made cultures from the throats of all the other children, and two of these certainly had diphtheria; that is to say, they had diphtheria in the sense that they had in their throats the *materies morbi* of the disease, which I was able to demonstrate by cultures. We can never say at what time the temporary immunity manifested by their not having developed clinical evidences of the disease, although they may have the *materies morbi* present, may break down, and they may go on and develop typical cases of diphtheria. On that account I am strongly of the opinion that we ought to immunize exposed members of the family wherever possible. In families of ordinary circumstances the expense sometimes becomes a controlling factor. If we could send our patients away from infected localities or surroundings we might save a great many more of them, but the family oftentimes does not possess the means; that feature, however, should not enter into the theoretical discussion of the matter. Unquestionably, we ought to always give 500 units of antitoxin to exposed persons for the sake of immunization. MacFarland says in a case of diphtheria of average severity he thinks 2,000 units sufficient. Those who contend for a smaller amount state that if you use 2,000 units in the first instance, that if in five hours there is not decided amelioration of symptoms you ought to repeat it, and instead of giving 2,000 you should give 4,000 units. The dose ought to be progressively increased as resistance of the disease to the remedial measure is developed. Sapinsky has recently reported a large series of cases in Germany showing a mortality of 1.5 per cent where antitoxin was used on the first day of the disease. The question is, whether it was used on the first day of the disease or the first day the membrane fully manifested itself in the throat. Sajous' Annual gives 5,500 cases drawn from private practice where antitoxin was used, and the death rate is given at 4.9 per cent.

The medical profession and the citizens of Louisville have reason to congratulate and thank our efficient health officer for securing the free distribution of antitoxin.

Dr. Wm. Cheatham: I was surprised to see the little difference in the mortality in the treatment of diphtheria in pre-antitoxin days and since the introduction of this remedy. I believe the essayist stated the difference was from 8 to 22 per cent; I thought the difference was very much greater than this; it is certainly greater than this in intubation

cases. Where we used to lose 75 per cent of cases and save 25 per cent, now I think we save 75 per cent and lose 25 per cent—the statistics are reversed. We not only see a great difference in intubation statistics, but in the proportion of intubated cases; cases of laryngeal diphtheria given antitoxin early, intubation has become exceedingly rare compared with what it used to be. Laryngeal diphtheria illustrates more forcibly than any other variety the benefit to be derived from the antitoxin treatment. The largest amount of antitoxin I have ever given was 9,000 units; this was in the case of a child about eight years of age. There was decided improvement in a few hours after administering this quantity of antitoxin, and in twenty-four hours the membrane had become loosened and was beginning to disappear. This case illustrated another point in the antitoxin treatment: I gave no wash for the throat except a little boric acid. I believe I have killed children in former years by over-treatment. If you use antitoxin promptly, local treatment is comparatively nothing. I usually prescribe a local wash of boric acid or peroxide of hydrogen, but where the child resists too much I use nothing but antitoxin. I have never seen any bad effects from antitoxin. The child I have just referred to came as near having some local trouble at the site of the injection as any I ever saw, but it amounted to nothing. I always sterilize the part to be injected with alcohol, and if the child is nervous I spray with ether so as to produce a little local anesthesia; I make the injection in the thigh, soak a little cotton in alcohol and put that over the site of the injection, and cover with adhesive plaster.

The essayist's statistics as to the after-effects of diphtheria are rather surprising; he only reported one case in which there was paralysis of the eye muscles, and probably one of paralysis of the palate. My experience has been that paralyzes of the eye and palate are much more frequently met with than his statistics would indicate. If I were treating a severe case of scarlet fever I would be sure to try diphtheria antitoxin; I am certain it has good effect; there is a strong similarity in these two diseases, and I believe diphtheria antitoxin would give favorable results in scarlet fever.

In regard to immunization: I have had several cases of diphtheria in families, one in each, where we immunized the other children and no more cases followed. Dr. Marshall's remarks on that point are very pertinent; still, I think where it can be done it is better to use an immunizing dose of antitoxin; the danger is slight and the benefit

may be so great that it is always advisable to give an immunizing dose of five hundred units of antitoxin to all exposed children. I have seen numbers of instances in poor families where they had to eat, sleep, and cook in one or two rooms, and with no antitoxin to other children only one case of diphtheria developed. The development of diphtheria, of course, in persons who are exposed, depends largely upon the severity of the infection and upon the condition of the patient's throat at the time; if they have a sound mucous membrane they may not develop diphtheria, although the bacilli may be present in the throat.

Dr. J. W. Irwin: About all we can say in regard to the essay is that it is an excellent one and up to date. It covers the whole field as to the statistics of diphtheria, before the antitoxin period and since. There is one point that strikes us, namely, that diphtheria seems to be greatly on the increase since antitoxin came into use; from statistics given the number of cases seem to have nearly doubled. Therefore, before the days of antitoxin many of the cases, perhaps, were not regarded as diphtheria that since antitoxin has been in use have been regarded as diphtheria, and if the old-style cases had been treated by antitoxin the records would probably have been different as to final results. In the last twelve years I have seen one case of what I called diphtheria, and that one did not die. I do a fairly large practice; I have seen a great many cases of disease of the throat, and I have seen five or six members of the same family affected with the same class of disease; I have had the bacteriologists discover in the deposits from such patients' throats the bacilli of diphtheria and I did not use any antitoxin, and all of the patients recovered. A number of observers have found the diphtheria bacilli in healthy throats, and no one would call those cases diphtheria. If we were to regard every case as one of diphtheria where the bacilli were found in the mouth or throat, then the number would be greatly increased. The cases I have seen as diphtheria have been of a very malignant form; the disease came on in a definite way, with definite and severe symptoms; with the characteristic deposits in the throat. These I regarded as cases of true diphtheria. Other cases I have seen where there were slight deposits dotted about the tonsils, with only slight symptoms, I have not regarded as true cases of diphtheria. I have used antitoxin in the last twelve years but a single time. I regret that it was used in that instance, as it took the patient eight months to recover, either from its effect or the disease.

Dr. Carl Weidner: I want to put myself on record again as a strong believer in antitoxin. In the last three years I have been strengthened considerably in this opinion, and I think now we have abundant clinical proof of the value of this agent in the treatment of diphtheria from the improvement in results obtained. Nearly all authors are agreed upon this point.

Immunizing doses of antitoxin I have not used, except in one or two cases. What Dr. Marshall has said is true; at the same time, his criticism is not altogether just. Where we have a severe epidemic of diphtheria we should thoroughly immunize all exposed children. In the few cases I have had, the value of antitoxin treatment was illustrated very typically. One child was taken sick, the case was doubtful as to diagnosis; a second child was soon affected with a typical clinical picture of laryngeal diphtheria; antitoxin was advised and used. A third child was sent away from the house, with directions as to local management, and if any symptoms developed it was to be returned at once. Within the next day or two that child returned with typical diphtheria of the larynx. Antitoxin was also used in this case. These two children made excellent recoveries in a short time without any complications and without any bad after-effects, while the first child, who had not been treated with antitoxin on account of the doubtful diagnosis, lingered along for five or six weeks before it finally recovered. She developed paralysis of the extremities; also of the palate, and some heart disturbances, and made a very slow convalescence. These three cases made a very strong impression upon my memory.

As has already been mentioned, we know how difficult it is to get reliable statistics. Croup was not apparently included in Dr. Allen's statistics. The mortality of croup ought to be mentioned in his paper; in this way the death-rate from diphtheria would be increased, because I believe in a large majority of the cases croup is laryngeal diphtheria, and croup being eliminated would make quite a difference in the statistics, in our own city at least.

I differ from Dr. Cheatham, as I did at a meeting of the State Medical Society several years ago, about the local management of diphtheria cases in addition to treatment by the use of antitoxin. I do not see any sound reason for not using local treatment, even if you do use antitoxin. Local treatment is strongly indicated in addition to antitoxin—not in the heroic manner we used to employ—but I would strongly recom-

mend the use of an antiseptic solution about the throat, and for this purpose Loeffler's solution stands at the head of the list. We want to lessen the quantity of poison absorbed into the system. I should use Loeffler's solution in every case exposed to the disease where the disease is present in one member of the family.

Dr. S. G. Dabney: I may be permitted to mention an incident, which perhaps many of you have already noticed in the magazines, not strictly bearing upon the scientific aspect of the question, namely, that Behring has lately been awarded a prize of \$20,000 for his work in regard to the antitoxin treatment of diphtheria.

Bearing directly upon the paper read by Dr. Allen, I would begin by emphasizing what Dr. Cheatham has said, that we all appreciate the fallacy that statistics are likely to lead us into. We all know how uncertain the diagnosis of diphtheria is, and I am fully prepared to believe that the microscopist may be mistaken as well as the clinician, although I believe in the microscope; but the class of cases I refer to now—the intubation cases—are overwhelming in their clinical manifestations, and we do not need the microscope to arrive at a conclusion. We used to put a tube in a child's throat, and expect that child to die. We now introduce a tube and expect the child to recover.

I may be permitted to refer to an experience I have had with one general practitioner in the west end of this city, extending over a period of several years. I do not believe I have introduced less than fifteen tubes for him, and I think as many as twenty; all these cases occurring in his own practice. I had three cases of intubation for him on hand at one time this winter, and in all the tubes that I have introduced for this gentleman we have lost but a single case; that occurred this winter. A tube had been inserted, and I was called about 3 o'clock in the morning, the message being that some trouble with the tube had occurred. The patient was a child aged twenty months, and it died before I could reach the house; evidently death resulted from obstruction of the tube, from the history I could obtain. If this child had been near enough to the physician, so that he could have reached it within a few minutes and withdrawn the tube, the child would undoubtedly have been saved. Still, one fatality out of fifteen or twenty cases is not discouraging. I can not believe that the average mortality of intubated cases is now as high as 30 per cent in private practice. I know that is what O'Dwyer said, but I do not believe at the present time we lose one third of the intubation cases in private practice.

Another point I would like to mention, which is of some local interest, and that is the extreme prevalence of diphtheria in the west end of the city. It would be interesting and also of some value if the health officer could discover the reason for the great prevalence of diphtheria in this locality.

I believe with Dr. Cheatham that private statistics would be much more favorable and show far better results from antitoxin than the reports from the hospitals of Boston, New York, Chicago, and other great cities, because in hospitals many of the cases are seen very late in the disease; and, if not in hospitals, in large cities they are seen in the very worst hygienic surroundings.

As to local treatment, I may say that in addition to the use of antitoxin I carry out, in the majority of cases, some form of local treatment. Loeffler's solution is rather painful as a local application. Local treatment depends much upon the strength of the patient at the time. If the child is in extremis it would be wiser to omit any local treatment, but generally it is advisable to carry it out.

A word about the walking cases of diphtheria: I would like to refer to one case I saw a few years ago as illustrating a typical walking case of diphtheria. A lady twenty-five years of age came to the office and said she had consulted a well-known practitioner in this city some weeks before. He said her throat looked very much as though she had diphtheria, but strange to say this gentleman did not advise her to remain indoors, nor did he report the case as one of diphtheria. She said she went to a drug store and procured her medicine, and continued to walk about the streets, rode on the street-cars, etc., just as usual. When she came to see me she had typical regurgitation of fluids through the nose, and the typical speech of paralysis of the soft palate. Undoubtedly this lady had had diphtheria and continued to walk about all the time.

Dr. M. K. Allen: I will admit that when the last epidemic of diphtheria in this city began I was doubtful as to the diagnosis, and did not feel sure of it until I saw at the end of August that we had had a 25 per cent death-rate. I knew certainly that so high a death-rate could not be attributable to follicular tonsillitis, or other throat trouble. The epidemic lasted for four months, and I gave you the statistics for that period. In the month of August, when the epidemic started, the physicians generally had not used antitoxin for two or three reasons; one was that in some instances antitoxin was not to be had, then again,

in many instances the patients were poor people, and did not have the money with which to buy it. After it became possible for the physicians to secure a supply of antitoxin the death-rate began to lessen.

For the information of the members of the Society I have jotted down the number of cases of diphtheria occurring in the city since the first day of January, 1902: There were reported during the months of January and February eighty-four cases, with sixteen deaths. I know, personally, that a great many more physicians are using antitoxin now than formerly.

In regard to the use of immunizing doses of antitoxin, this should certainly be practiced by every physician. I saw three cases of diphtheria in one family; antitoxin was used in all three cases; I also used immunizing doses of antitoxin in three or four other children in the same house, and none of them took the disease. Next door to this house a case of diphtheria developed in a boy eight years old; he was attended by a physician living across the street, who said he did not believe in using antitoxin and did not propose to use it in this case; the result was that the boy died. All three of my cases recovered, and the other children in the house who received immunizing doses of antitoxin did not take the disease. Three or four other children next door developed the disease, were given antitoxin, and got well; the first boy was not given antitoxin and died.

In this connection I want to report a case, not one of diphtheria, but it may be of interest in relation to the antitoxin treatment: Yesterday morning about five o'clock I was consulted by a physician in my neighborhood who had a case of tetanus under observation. The patient was very plethoric, a man of full habit, and the history was that a mule had tramped on his foot three weeks ago. The wound healed nicely and he had no trouble until yesterday morning at five o'clock, when he awakened with a convulsion. He had one convulsion after another until he had twenty. It was a very poor family, and this is probably why the health officer was called in consultation. I arranged for a supply of tetanus antitoxin to be furnished free of cost, and we used 20 c.c. in two doses, one at ten o'clock yesterday morning, the other about twelve o'clock. After the first dose the patient had no further convulsions, and he can now open his mouth as wide as anybody. To-day he has some pain and stiffness about the muscles of his neck, but otherwise he is in perfect physical condition.

P. F. BARBOUR, M. D., *Secretary.*

THE AMERICAN PRACTITIONER AND NEWS

"NEC TENUI PENNÂ."

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H. A. COTTELL, M. D., M. F. COOMES, A. M., M. D., Editors.

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SWILL MILK AND OLEOMARGARINE PROHIBITED.

The orders issued by Health Officer Allen, of Louisville, prohibiting the feeding of still slops to dairy cattle and selling oleomargarine as butter, went into effect in the city of Louisville the 15th of March, 1902. The grocer and persons who handle butter seem to be very well contented with the arrangement, and are disposed to obey the order to the letter, and most of the dairymen are also disposed to cease feeding their cattle still slop. Some, however, will not obey the rule until forced to do so by the law. If the fact is known that the dairyman feeds his cattle on still slop it will be quite sufficient to induce the public to boycott him, because the average citizen is fully aware of the fact that the milk from cows that are swill-fed is not first class; in fact, is not fit for use. It will not remain uncurdled long enough to permit the cream to rise to the top. It is an unhealthful food, wholly unfit for children, and equally deleterious to many adults.

THE third annual meeting of the Ohio Valley Medical Association will be held in Owensboro, Ky., May 1 and 2, 1902. The committee on arrangements have made extensive preparations, and everything bids fair for the most successful meeting in the history of the State.

This is one of the most successful medical societies in the State, and every physician who can attend its meeting should do so, as they are always interesting and profitable. Owensboro is a beautiful little city, and we are quite sure that the profession of the town will do what is in their power to make the stay of the visiting doctors pleasant.

DEATH OF DR. GEORGE M. WARNER.

Professor George M. Warner, of the Louisville Medical College, died suddenly on Sunday evening, March 16th, from angina pectoris. He was born in Louisville in 1858, and graduated from the Louisville Medical College in 1880 and began the practice of medicine, and has been one of the most successful of the younger set of practitioners in the city. He was Professor of Materia Medica and Therapeutics in the Louisville Medical College at the time of his death, and was a most excellent teacher and a favorite with the students. In 1886 Dr. Warner married Miss Theo Hood, a niece of General J. B. Hood, of the Confederate army. His wife and two daughters survive him. Dr. Warner was a generous man, mild in his manners, and ever true to his friends.

THE Committee on Pathologic Exhibit for the American Medical Association is anxious to secure materials for the coming session at Saratoga, June 10th to 13th inclusive. This exhibit was accorded much praise and comment during the sessions at Atlantic City and St. Paul respectively, where were collected valuable exhibits from all parts of the country. The materials included not only pathologic specimens, but the allied fields, bacteriology, hematology, physiology, and biology, were well represented. It would also be desirable to secure exhibits of new apparatus, charts, etc., used by teachers of pathology and physiology in medical colleges.

This exhibit has already become a permanent feature of the annual sessions of the American Medical Association, and the committee is desirous of securing its list of exhibits as early as possible, and to this end asks those having desirable materials to communicate with any member of the committee. To contribute to the value of the work, it is suggested that as far as possible each contributor select materials illustrative of one classification, and by such specialization enhance the usefulness of the display. Those lending their materials may feel assured that good care will be given their exhibits while in the hands of the committee, and due credit will be given in the published reports.

Very respectfully,

F. M. JEFFRIES, 214 E. Thirty-fourth St., New York City,

W. A. EVANS, 103 State Street, Suite 1403, Chicago, Ill.,

ROGER G. PERKINS, West. Res. Med. School, Cleveland, O.,

Committee on Pathologic Exhibit, American Medical Association.

To the Members of the State Medical Society:

Our State Medical Society convenes in Paducah on the 7th of May, and it is hoped that we will have one of the largest gatherings that has taken place in the history of the association.

The Society is somewhat in arrears financially, and it is hoped that every member may be present and help us out by paying his dues. As there is some change in the relation of the State societies to that of the American Medical Association, we will have to comply with the changed conditions. Instead of sending some dozen or more delegates, as heretofore, we can now only send two. Under the reorganization regulations of the American Medical Association it will be composed of two main divisions, to wit: the regular members and the delegates appointed by the different State societies. All business and legal matters, including election of officers, change of rules, selecting places of meeting, etc., will be in the hands of the House of Delegates, and all scientific matters pertaining to medicine will be transacted by the regular members.

The House of Delegates can not exceed one hundred and fifty in number. Each State and Territorial Society has the privilege of sending one delegate for each five hundred members or under, and one in excess of five hundred. The army, navy, and marine hospital service sends one member each. Each section of the association is entitled to two delegates. Therefore, get ready and attend our meeting at Paducah in full force.

Faternally,

T. B. GREENLEY, M. D., *President.*

Current Surgical and Medical Selections.

ARREST OF NATURAL RESPIRATION FIVE AND A HALF HOURS BEFORE STOPPAGE OF THE HEART IN A CASE OF ECLAMPSIA.—Bidone (*Ann. di Obstet.*, Firenze, 1901) publishes report of a remarkable case which occurred in his practice. The patient was a multipara, seven months pregnant, and was seen by him for the first time in a condition of eclamptic coma. The patient's respirations, which at first were regular, ceased to be so, and then stopped, the pulse at the same time becoming slower and weaker. Artificial respiration was begun, with the result that cyanosis disappeared, but no return to consciousness followed. In order to save the woman's life Cesarean section was performed, and a dead fetus was removed. During the operative procedures artificial respiration was continued; the heart still beat with regularity and considerable force. No return to consciousness manifested itself, and finally, after five and a half hours of artificial respiration, the patient was allowed to die owing to the physical prostration of the attendants, which prevented them from continuing the process any longer. —*Edinburg Medical Journal.*

CASE OF OVARIAN TERATOMA.—Glockner (*Centralbl. f. Gynäk.*, Leipzig, 1901, No. 37) publishes a report on a case where he removed an ovarian teratoma in which there was a large amount of nervous tissue. Hair, teeth, bones were all found, and in addition skin which, under the microscope, showed sebaceous and sweat glands, and also nerve tissues. In this, gray matter predominated; pyramidal ganglion cells were present, and a central canal lined by cylindrical epithelium. The ganglion cells resembled those found in the spinal gangliæ, while others were arranged in a similar manner to the sympathetic ganglia connected with the posterior roots of the spinal cord. Embryonic eye tissues were also found, such as choroidal pigment and cells resembling the granular layer of the retina.—*Ibid.*

THE SURGICAL TREATMENT OF RETROVERSION OF THE UTERUS.—Huët (*Gynecologic*, Paris, August, 1901), considers this condition chiefly from the intra-abdominal method of shortening the round ligaments. He considers that such a procedure is preferable to ventro-fixation, and further that the intra-abdominal method is better than that designated as the Alexander-Adams operation, as, by the former method, adhesions and pathological changes in the appendages can be seen and dealt with; and further, as the strongest portion of the round ligament, which is found nearest to the uterus, can be employed for fixation purposes. This holds specially true in the Doléri operation, where the round ligament is passed through a slit in the peritoneum muscle and fascia of the anterior abdominal wall and fixed to those and to the other round ligament, which has been treated similarly. Huët considers that the operation should not be performed under the following conditions: (1) Where the retroversion causes no symptoms; (2) where the retroversion can be corrected by use of a pessary; (3) where the condition can be rectified by proper massage; (4) retroversion complicated by prolapse of the pelvic viscera. Labor and pregnancy, in the author's opinion, are less frequently interfered with by shortening the round ligaments than by ventro- or vaginal fixation.—*Ibid.*

SUTURE IN FRACTURE OF THE PATELLA.—Barker (*Archiv. für klin. Chirurgie*, Band lxxiii., Heft 4), after describing in detail the technique of his well-known method of subcutaneous suture, states that he has performed this operation twenty-one times. With the exception of one case, which died of delirium tremens on the seventh day after the operation, the results were perfect, the patients regaining the full use of their legs.—*The American Journal Medical Sciences.*

DISCUSSION UPON SPINAL ANESTHESIA.—Hendrix (*Jour. de Chir. et Annales de la Soc. Belge de Chir.*, No. 7, 1901) states that Bier, the discoverer of this method of anesthesia, has stated that he considers it more dangerous than chloroform, disapproves of the enthusiasm with which it has been received, and that it should never be employed without full knowledge of those modifications which have been found to be indispensable.—*Ibid.*

A CLINICAL LECTURE ON IDIOPATHIC DILATATION OF THE ESOPHAGUS.—Swain (*British Medical Journal*, November 16, 1901) states that dilatation of the esophagus which exists without any obvious mechanical obstruction is a rare condition. The author reports the case of a woman aged twenty-six years, who complained of difficulty in swallowing and a sensation of choking, followed by vomiting, especially at night. There was difficulty in swallowing and considerable pain in the chest, which, however, was relieved by vomiting. Examination showed that a tube could be easily passed into the stomach. After washing out the stomach through the tube and then withdrawing it about eight inches, undigested food could be washed out of the esophagus. The reaction of the fluid removed from the stomach was acid, while that from the esophagus was neutral. Treatment has not proved very satisfactory—electricity, tonics, and feeding with the stomach-tube have given no relief. A comparative degree of comfort only has been obtained by the ingestion of soft foods and the systematic lavage of the dilated esophagus. The question of gastrostomy has been considered, but has not been thought advisable as long as the patient is keeping up her nutrition.—*Edinburg Medical Journal*.

OPERATION FOR EPITYPHLITIS IN THE FREE INTERVAL; ENTERO-ANASTOMOSIS.—Martin (*Centralblatt für Chirurgie*, September 28, 1901) states that Jaffe recommended entero-anastomosis as the best operation in the free interval for those rare cases of epityphlitis in which it is impossible either to find the appendix or to remove it. Jaffe reports two such cases, in each of which he resected the cecum, but both developed a fecal fistula, while in another case he performed entero-anastomosis after a long and fruitless search for the appendix, but the case died of peritonitis. As a result of this experience Jaffe has since stated that he believes entero-anastomosis to be an operation of no value in this type of cases. The author reports the case of a man who had had repeated attacks of epityphlitis during three years, the attacks recurring at shorter intervals, with finally the formation of a tumor in the ileocecal region, severe pain, and other symptoms of intestinal obstruction. As a result the patient was incapacitated from his work, and operative interference was decided upon. On operation it was found that the ileum was bound down to the cecum with old tight adhesions, and as a result it was impossible to find the appendix so, the ileum was then anastomosed with the colon and the wound closed. The patient made an uninterrupted recovery except for attacks of slight pain in the ileocecal region. Although it is impossible to draw results from one case, still this case shows that in those cases of relapsing epityphlitis, operated on in the free interval, where the appendix can not be found except by a prolonged search, or even then not at all, it is much better to perform entero-anastomosis at once than to endanger the patient's life by a perhaps fruitless search for the appendix.—*The American Journal Medical Sciences*.

EMULSION-ALBUMINURIA.—Cramer (*München. Med Wchnschr.*, January 21, 1902) had already met with two cases of milky urine, passed shortly before death from puerperal eclampsia, in which the milky appearance arose not from any admixture of fat associated with chyluria and lipuria, but due to some proteid substance in an unusual physical state. Last year a third case fell under his observation, similar in most points except for the fact that it was not of puerperal origin. Here again, shortly before death, the urine voided was milky. Neither warming, nor addition of acid, nor filtration, removed the milky appearance of the urine. Innumerable globules of the most minute size could be detected under high powers of the microscope. When water was added to excess, a few drops of acetic acid or of liquor potassæ reduced the milky condition to one of opalescence only. Heating the mixture hastened this change; water added to great excess produced the same result. On boiling, a copious precipitate was obtained, with disappearance of the opacity. Ether extracted no fat; osmic acid failed to give any indication of fat. Artificial peptic digestion cleared the urine; HCl alone did not. Independently of the milkiness, uric acid crystals separated out in considerable number. After heating with one per cent HCl for one hour, a crystalline deposit was obtained, which was identified as allantoin on analytical investigation. According to the author, no other instance of milky urine due to native proteids, similar in nature to the three observed by him, is to be found in medical literature.

[Byrom Bramwell and Noël Paton gave details of a case in which a copious precipitate of some variety of globulin in crystalline form was present in the urine; the urine, however, was not milky.—*Rep. Lab. Roy. Coll. Phys., Edin.*, Vol. V.—A. L. G.]—*Edinburg Medical Journal*.

THE SURGICAL TREATMENT OF AFFECTIONS OF THE PANCREAS.—Recent events have excited so much renewal of interest in diseases of the pancreas that the symposium of the New York State Medical Association on this subject has more than a local interest.

Whatever may be the eventual outcome, there is but little question at present that surgery alone can be expected to afford relief to the more severe affections. The contribution of Dr. Roswell Park, therefore, is especially timely and deserves a wide distribution. The methods of operating are stated by him with sufficient clearness and thoroughness, although the conditions to be operated upon evidently are debatable. The value of the dictum "when in doubt, operate" depends altogether upon the doubter, and it can easily be admitted that so experienced a surgeon as Dr. Park would be justified in undertaking an operation which should be regarded as unwarranted if performed by a tyro.

The importance of a thorough exploration of the region of the pancreas in severe injuries of the upper abdomen, especially from penetrating wounds, is sufficiently obvious, and is not likely to be neglected. The negative results of exploration are not to be too confidently depended

upon, since the situation of the organ and its relation to surrounding parts are such that slight injuries may be overlooked or disregarded.

Experience, however, shows that apparently slight injuries to the pancreas may be followed by the most disastrous consequences. Temporary drainage does not add materially to the risks, and may be the means of securing the best possible effect from surgical treatment.

When acute pancreatitis or omental bursitis results from injury or from other causes, there can be no question of the propriety of surgical treatment. Although recovery from acute pancreatitis may take place without operation, the course in such cases is relatively mild, and there are usually no urgent symptoms seeming to demand surgical interference. The grave manifestations call for treatment by the surgeon, whatever may be known or unknown as to their causation. No more striking illustration of the truth of the latter statement can be offered than the noteworthy communication of Dr. J. W. Mayo, which shows that success may follow the surgical treatment of necrotic pancreatitis and disseminated fat-necrosis—critical as was the condition at the time of the operation.

We can but express our satisfaction with Dr. Park's article as a whole, and have no doubt it will warmly be welcomed by the surgeon and lead to more active interference in possible or probable disease of the pancreas than has hitherto been undertaken. Not the least benefit to be derived from the repetition of such operations will be the acquisition of greater accuracy in diagnosis and prognosis, which, when attained, will permit the elimination of the unnecessary from the necessary efforts by removing the doubt from the mind of the operator.—*Boston Medical and Surgical Journal*.

THE LYMPHATIC GLANDS IN CANCER.—Covdray (*Revue prat. d'Obstetrique et de Gynecologie*, No. 9, 1901) concludes an extended paper on this subject by expressing doubt as to the advisability of extirpating glands which are apparently healthy, the cancerous growth being in an incipient stage. Glands which are enlarged and non-adherent should always be removed; if adherent, their ablation is usually fraught with danger to the patient. Theoretically, exposure of the open lymphatics favors fresh infection; but practically there is as yet no method of operation which avoids this danger.

The writer suggests what he calls the "sclerogenous" method, which aims at closure of the lymphatics in the neighborhood of the tumor by making numerous injections of chloride of zinc around the growth. He reports a case of scirrhus of the breast in a woman, aged fifty-eight years, five years after treatment by this method. Nothing remained of the original growth but a small, hard nodule. Five years later the cancer had recurred, with enlargement of the axillary gland. He infers that in a certain class of cases the growth of circumscribed cancer can be arrested for a long period by the artificial production of fibrous tissue around the growth, which causes obliteration of the lymphatics. This treatment is especially applicable to patients who refuse a radical operation.—*The American Journal Medical Sciences*.

FOURTH TRIAL OF A SUIT FOR DAMAGES.—The fourth trial of the suit brought by Miss Helen Ward against St. Vincent's Hospital, to recover \$30,000 damages for injuries alleged to have been received by improper treatment at the hospital, resulted on March 21st in a verdict in her favor for \$19,420, which includes an allowance for counsel's fees. It will perhaps be remembered that Miss Ward, who is a sister-in-law of ex-Judge Henry E. Howland, had an operation performed on one of her legs while she was a private patient at the hospital, and that after the operation a nurse carelessly allowed a hot-water bag to remain in contact with the limb, in consequence of which, it was claimed, permanent injury had resulted. At the first trial of the suit the case was dismissed; the second resulted in a disagreement of the jury; and on the third trial she secured a verdict for \$10,000. The case was then appealed, and the Appellate Division reversed the judgment on the ground that the hospital was not bound to provide a patient, even though a private one, with its best nurse, and ordered a new trial.—*Boston Medical and Surgical Journal*.

VAGINAL PUNCTURE AND INCISION.—K. Franz has studied eighty-one cases in which vaginal puncture was done in Fehling's clinic, in thirty-five of which an incision was also made. The clinical diagnosis was confirmed by puncture fifty-six times; in five a doubtful diagnosis was decided, and in ten the diagnosis was changed. Puncture is of special value for differential diagnosis of tubal tumors in Douglas' pouch, whether inflammatory, following tubal pregnancy, or from pelvic peritonitis. Incision gives its best results in uncomplicated abscesses in Douglas' cul-de-sac. It is contra-indicated for hematocele. In this the healing is no more rapid than without operation, and there is always a great chance of infection.—*American Journal of Obstetrics*.

MAYDL'S OPERATION FOR EXTROVERSION OF THE BLADDER.—Pendl demonstrated a successful case of the above to the Medical Society of Vienna. The patient was a boy, aged seven. The bladder was freed after securing the ureters by the introduction of a fine catheter into each, and was excised, saving only a portion 1.5 cm. long and 5 mm. broad, which included the openings of the ureters. The peritoneal cavity was then opened at the upper angle of the wound, and the sigmoid flexure exposed and incised longitudinally. The portion of bladder, including the ureters, was stitched into the opening, the sutured area being largely extra-peritoneal. At first the urine escaped continuously per rectum; after two months there was continence for three or four hours. Frank reported that the patient demonstrated to the Society two years before, on whom a similar operation had been performed, was in the best of health, and was continent for five or six hours. The available statistics show that Maydl's operation has been successful in 87.5 per cent of the total cases, a result which should dispel the fear of an ascending infection of the ureters and kidneys.—*Wien klin. Wchnschr.*

THE SURGICAL TREATMENT OF THROMBOSIS OF VARICOSE VEINS OF THE LEG.—Kramer (*Centralblatt für Chirurgie*, No. 14, 1901) states that thrombosis is a very unpleasant complication of varicose veins, which is generally followed by repeated attacks of inflammation, swelling, eczema or even abscesses, which can only be cured after weeks or months of careful treatment and rest in bed. The author recommends an incision, under local anesthesia, over the thrombus, the opening of the vein in its longitudinal direction, and then carefully turning out the mass of clot. The author has performed this operation in fifty cases with most gratifying success; in no cases were there sequelæ, such as emboli, fistula, nor bleeding from the open vein, which was impossible, because the peripheral and central lumen were closed or obliterated by clots. The wounds healed kindly by the patient being at rest, and left behind small painless scars. The veins became obliterated, and under careful asepsis this operation is a simple and safe method of treatment.—*The American Journal Medical Sciences*.

A SIMPLE PROCEDURE FOR INCREASING THE AMOUNT OF FAT IN DILUTED AND STERILIZED COW'S MILK.—Romanoff (*Vratch*, September 1, 1901) suggests a method for accomplishing such a modification which does not seem to possess any advantage over our more accurate laboratory methods. Fresh milk is diluted with an equal part of oatmeal-water containing four per cent of sugar. The mixture is poured into six bottles, sterilized in Soxhlet's apparatus for ten minutes, and then placed on ice for from two to three hours. The bottles are then carefully removed, without shaking, and the lower half of the milk in each bottle is siphoned off. The remaining milk is shaken, warmed, and given to the infant. This upper milk is said to show three or four times as much fat as the part removed by siphoning, being estimated at from 2.9 to 3.6 per cent.

[As this method makes no provision for varying modifications of the proteid percentage, which in this mixture must be constantly about to 1.50 1.75 per cent, a percentage which many infants can not digest in the earlier months of life, it would seem that the product offers little advantage over other mixtures of the same kind, excepting, perhaps, in previous sterilization (which may be undesirable) and in the fact that the emulsion of the fats is little disturbed (also a gain of little practical importance in most cases). The inflexibility of the sugar percentage is also another defect.—T. S. W.]—*Ibid*.

THE AMERICAN PRACTITIONER AND NEWS.

"*NEC TENUI PENNÂ.*"

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No 9.

Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

VALEDICTORY.*

BY EARL R. SNYDER, M. D.

Mr. President, Members of the Faculty, Fellow Classmates, and Ladies and Gentlemen of the city of Louisville: Calmly have we been gliding down the stream of Time, gently drifting onward on its silent current, scarce heeding the flitting moments as they hurried by until their accumulation has warned us that another year has fled. Another year of labor, of joys and sorrows, of tears and smiles, of pleasant memories and mournful recollections is all but lost in the vast repository of Time since last we were assembled here to celebrate with gentle rites this anniversary—joyous, indeed, but at the same time fraught with the sadness and the melancholy which such an occasion ever brings. Another collegiate year has drawn to its close. Another year, rich in its present harvest, brilliant with its future hope, is inscribed on the records of our alma mater. One more jewel has been added to the already sparkling diadem of the University of Louisville. Another leaf, as it were, from Time's hoary register has been added to her history, but on that leaf is traced the tearful farewell to our college career and to all the places and scenes and happy days connected with it.

This, ladies and gentlemen, is a day full of significance, responsibility, and meaning to us. The parchments which we receive to-day are the passports which usher us across the threshold into the medical profession. We stand, as it were, on a summit separating the sunny

*Read at the Commencement of the Medical Department of the University of Louisville, March 28, 1902.

past from the unknown future. We are about to venture out upon the unknown and untried path of life. The great mysterious "to be" stares us in the face. In the heavens of our mind, where wing the butterflies and moths of fancy, our imagination conjures up a future replete with success and contentment, yet who can wonder that in more sober judgment a profound solicitude overcomes us for that future, which, silent and impenetrable as the Sphinx, reveals not its dangerous shores and treacherous sands, its strange ebb and flow of tide. Ah, the future, like the sublime mystery of Providence, goes on in silence, giving us no explanation of itself—no answers to our impatient questionings.

The degree of doctor of medicine has just been conferred upon us by an institution whose merited fame and honor extends to the four quarters of the globe. Each one of us will bear willing testimony to the assiduity with which she has labored to cultivate our mental faculties and improve our morals. She has, indeed, been a "benign mother" to us, and with a heart, as it were, throbbing with the impulse of maternal love and concern our alma mater dismisses us from her protecting care and motherly arms and embarks us upon the broad current of life to strive and reach the harbinger of rich reward, freighting us with her choicest blessings and holy benedictions and mirroring to our ambitions and our hopes the achievements and examples of her famed alumni, many of whom have already emblazoned their names on the banner of fame. From the Atlantic to the golden bowlders of California, from the Great Lakes to the Sunny South, relatives and friends have their eyes directed to this scene, and from the homes of all of us come fathers' blessings and mothers' prayers, honoring the sacred ceremonies of this hour.

We enter the duties of the profession at a time when the medical mind is profoundest in its thought, at a time when its opportunities to do good have never been excelled, at a time when its power to baffle death moves on as steadily and surely as the earth about the sun, moves on in an irresistible current of might and majesty, conquering and to conquer.

No longer is there a marked resemblance of the physician to the hangman, because they both kill their patients by "drops"; no longer does the science remain a secret to the ancient barber, whose only skill was in knowing how to "bleed" you. The intellect must indeed be a part of the infinite to fully comprehend the wondrous growth and

illimitable progress of the medical science; that science which directly promotes the welfare of man's own structure, guards his very life, fosters the vigor of his youth, promotes the mental and physical eye, even the moral powers of his manhood, sustains his failing strength, restores his shattered, preserves the integrity of his aging, faculties, and throughout his whole career supplies those conditions without which both enjoyment and utility of life would be impossible. At first the science was as narrow as the bridge that leads to the Mahometan paradise, but anon it expanded into a breadth greater than the "Way to Death." With what drugs, what charms, what conjurations, and what mighty magic, as it were, the physician stays the patient from the unknown deep and clothes again the shapeless form with throbbing, robust flesh. Tell me, is he not, in every stage of his career, an apostle of hope, the pillar of the world, the life of the human race? Does not Scripture immortalize him when it says, "Honor the physician for the need thou hast of him, for the Most High hath created him"?

Do we not read each day, yea, each hour, of the physician sacrificing his life and his health to the dread dangers of contagion, that posterity might have a preventive to ward off the stealthy invasion of malignant disease? Is he not awakened from peaceful slumber at the humble bidding and the modest rap of poverty, when the wind and the rain and the snow hold his comfort in contempt, knowing his only reward will be a hearty "thank you," or a "God speed you in your benevolence," yet does he not carry to that humble abode, perhaps sealed with clay and thatched with straw, the same learning and skill and kindness that he carries with him to the sick chamber of the palace?

Even though he may never wear the warrior's crimson wreath, the poet's chaplet of bays, or the statesman's laurels; though it may never be his to bring to a successful issue a great political revolution; to be the founder of a republic which shall be a bright star among the constellation of nations; even though his name may never be heard beyond the narrow limits of his own little community, yet is his mission none the less a great and a noble one. To a man of large and noble soul, to him who blends a cultivated mind with an upright heart—to him and him alone is paid the tribute of deep and genuine respect. Men whose daily acts are controlled by their judgment; men who recognize the fact that life is a real and an earnest affair; men whose life and conversation are indicative of that serious mien and

deportment which betrays those having great interests committed to their care; men, I say, who fully realize the importance of every step that they may take, and consequently bring to it the careful precision of a mind trained to think precisely, these are the men who attain to true manhood. There is love animating their hearts, sympathy breathing in every tone, tears of pity in their eyes. Beneath their smiles lurks no degrading passion; within their hearts there slumbers no guile. They stand throned on truth, their fortress wisdom, their dominion the vast and limitless universe. Such men are the physicians—let us not underestimate them.

Only a few years since the University of Edinburgh, with its thinkers whose minds seem a part of the infinite, gave out the two greatest discoveries of modern science, anesthetics and antiseptics. Dr. Roentgen has made it possible to penetrate the human body with light and remove therefrom such foreign substances as may endanger life and health. Dr. Koch, the discoverer of the tubercle bacillus, has set the medical mind to work which promises to eliminate from the human race its greatest scourge. In the science of bacteriology, beginning with vaccination, we have seen the fruitful results of anti-toxin, and in the heavens of medical enlightenment we see the dawn of another truth that will protect the human family from the dire invasions of diphtheria, typhoid, and tuberculosis.

The medical mind can not be content with the present. It is ever journeying through the trodden regions of the past or making adventurous excursions into the mysterious realms of the future, of which so little is known; yet the doctor, more than all men, yearns to become acquainted with its hidden secrets. He wanders into its dim precincts until reason becomes obscured, like mariners who have drifted into an unknown sea of whose winds, tides, and currents they are wholly ignorant. He turns to the past, that mighty reservoir of men and things, whence he can gather knowledge and learn wisdom from others' mistakes. There he is introduced into Nature's vast laboratory, and from the elemental labors there witnessed the profession has soared from a position of suspicion, withcraft, and ridicule, higher than the condor above the Andes, to be forever honored and admired. The dread fears of a fatal ailment are being constantly labeled as "a has been" and a "used to be." Its ascent to perfection moves on as steadily and surely as the earth about the sun. Its face is always devoutly turned toward the dawn, and soon wings, as of the morning,

will be given it to carry its healing blessings to the four quarters of the globe. The learning of the medical profession rears its head above the clouds like a snow-capped peak, and the current of its skill and attainment will move on in resistless might and majesty forever.

Beginning with Galen and Hippocrates, the fathers of medicine and for centuries the standard authorities on medicine, to the present time, in no other branch of science has there been such a wondrous evolution and revolution for good.

To you, the people of Louisville and Kentucky, who have contributed so liberally and so generously to this honored institution, whose profundity reflects the advancement of medical learning as truly as the drop of dew reflects the image of the earth and sky, we extend congratulations for its presence in your midst. We heartily convey our gratitude to you for your historic hospitality, which shall remain in our hearts always as a joy forever.

To all the Christian assemblages of your city we express our deepest thanks for the influences for good which they have brought to bear on our lives and characters.

To you, the Faculty, what can we say to you? How express the mingled feelings which come surging up within our bosoms on this momentous occasion? How express our gratitude for your unfailing persistence and your saintly patience? Happy, indeed, are we, that fortune has detained all of you in our midst, that we may go forth with your blessings on our heads to sustain us in the struggle of life when far away from your fatherly care. How can we thank you for your loving guidance during the years that we have been placed under your mild and gentle direction? If ever, during the years we have known, honored, and cherished you, our acts have caused you pain and trouble, think of them only as the acts of college boys, and be assured that you will ever be held in grateful remembrance by the students of our dear old University. You have toiled with such unwearied zeal for our welfare and advancement; you have spent so many wearisome hours shaping and moulding the crude clay, with an artist's knowledge and precision, into something lifelike, something useful. You have upheld us in the depths; battled with us to the surface; shared our triumph on the last day. Ah me! how can I say it, but yet—yet it must be, and now we bid you an affectionate farewell, and in the time to come, when our thoughts are gently wafted back on the kindly wings of memory to this soon to be the inexorable past, you

shall always maintain the place of honor in the recollections of our happiest years.

To you, the undergraduates who may be in this audience, you are happy that another year of useful labor has passed over your heads, and that now you are about to enjoy a period of ease and relaxation from your toils. On the faces of all of you may be read the happy visions which go floating through your minds. Old home associations come welling up within your bosoms, and already you fancy yourselves surrounded by dear friends and loving relatives, recounting to them the haps and mishaps of another year gone by. When the declining year brings around the hazy autumn, with its mellow tints and somber hues, you will return refreshed and invigorated to recommence your pleasant tasks. Again will you be greeted by the kindly and affectionate welcomes of the Faculty and the loving hand-clasps of college friends. Farewell to you! Be courageous, be perseverant, be determined, and your future will be laureled with victory. And now to you, dear classmates, must I bid farewell? How like a tolling knell it strikes on the ear, causing a shade of sadness to tinge our otherwise beaming faces. It tells us that we must part. It warns us that the sweet ties of friendship formed beneath the fostering care of this grand old institution must be rudely severed; that we, now gathered around the feet of a kind mother, will be scattered abroad throughout the land, perhaps to meet no more. Oh, the waves of memory that dash over me, as I stand here about to break the last golden link of happy days, happy days which will soon live but in the memories of the past! To think that we who have toiled and struggled up the rugged path which leads to knowledge and to wisdom; we who have shared the joys and the sorrows of each fleeting hour—to think that we, too, must part; that we must drift asunder on the broad stream of life; that days and months, aye, years may roll between us ere we meet again—calls forth the unbidden sigh, the silent tear, which I in vain would endeavor to repress. As I look around me and behold on every side familiar faces, endeared to me by long association and many acts of kindness and generosity, and feel that from them I must part, the words that I would utter fail me, and my heart is deluged with sadness.

Once more memory unveils her treasured storehouse, and from each shadowy cell shines forth some hidden gem implanted there by the friends of my college days. Oh, fain would I linger yet among you, but fate, the inexorable arbitrator of human destinies, forbids, and we must part. Our college days are over.

Let us then go forth with the firm determination to preserve the fair record which we have won, and by our acts add another star to the constellation of glory in the heavens of our beloved alma mater. Acting thus, honor and success will cling to us, and when Time, with his chastening hand, shall have dimmed the eye and silvered the hair, we can look contentedly back on the past, and feel our hearts grow green by the waters of memory as we think fondly of the class of 1902.

May the hand of Time rest lightly upon you, and may the arm of God protect you throughout your whole career, is the blessing that I wish you all. And now, kind friends, to one and all of you I bid a last and a fond farewell.

CANNELTON, IND.

THE IMPROVEMENT IN MATERIA MEDICA AND THERAPEUTICS DURING THE PAST CENTURY.*

BY JOHN G. CECIL, B. S., M. D.

Professor of Materia Medica, Therapeutics, and Public Hygiene, University of Louisville.

A simple recountal of the improvements in these branches of medical science during the hundred years just past would more than tax your patience, accordingly I will content myself by asking your attention to only a few of the more important.

The discovery of new remedies, the progress in the manufacture of medicines, and the improved methods of applying therapeutic agents to the alleviation of human suffering is truly wonderful, and can only be appreciated by the centenarian, or one well versed in the history of medical sciences. It may safely be asserted, without fear of contradiction, that progress and improvement in this realm of science has kept pace with that in any other, and that more of genuine advancement has been made during the past century than during all the preceding centuries together.

Familiarity with modern improvements is conducive to forgetfulness, and we scarcely stop long enough to contrast the attractive, tasteless, and efficient medicines that are dispensed to us with the crude, inelegant, bitter, and too often nauseating drugs that were given to our forefathers. So rapid have been the changes, so numerous the discoveries, so great the improvements, that books upon the subject can

*Faculty valedictory at Commencement of the Medical Department of the University of Louisville, March 28, 1902.

scarcely keep the pace; one edition is not exhausted before another is demanded, and an edition issued ten years ago is to-day out of date.

It has long been said that the exhibition of each dose of medicine is an experiment, and that the practice of medicine is wholly empirical. In a narrow sense this true, but in a broader and truer sense it is untrue. The action of medicines upon individuals differ as individuals differ the one from the other; in a generic sense the action of a given medicine is practically the same upon all individuals.

The administration of all medicines in common use is now predicated upon what is termed their physiological action. Thousands of experiments by patient workers have been made upon healthy humans and the lower animals to determine the effects of medicines upon the various systems, organs, and tissues of the human body. With this vast array of observations and facts established by competent observers, together with the accumulated evidence of clinicians of all ages past before him, the physician of to-day is not groping blindly in the dark, but his application of therapeutic agents to the cure of disease rests upon a real indisputable scientific basis. By far the greater proportion of what is known about the scientific action of medicines is the result of study and experiment during the last century.

Permit just a word in passing in regard to vivisection, or experiments upon live animals for scientific purposes. Much that is unwise and short-sighted has been said and written, and many attempts have been and are still being made at prohibitive legislation against these experiments. The best answer to all such caviling is that had not these studies and experiments been made the science of materia medica and therapeutics would be just about one hundred years behind what it is to-day; and the just retribution for the anti-vivisectionist would be to relegate him when ill to the crude empiricism and nauseous medication to which his great-grandfather was subjected and had to endure.

An advance of extraordinary value effected wholly during the past century has been the discovery and separation of the alkaloidal extracts from the crude drugs. The chief or principal action of a drug almost invariably depends upon its alkaloidal extract. This extract is a definite and single medicine, whose dose is small, whose action is definite and powerful, and whose effects are more easily observed and studied. In most instances the usefulness of the extract is equivalent in every way to the drug from which it is separated, and it is easier of administration. For example, how much more elegant, accurate, and efficient

is quinine than cinchona, strychnine than nux vomica, morphine than opium! Another very decided advantage accruing from the use of these extracts, which are stable and invariable in strength, is exact accuracy in dosage, and our ability to obtain definite results and ascribe the effects with certainty to the remedy given.

To the enterprising chemist and pharmacist we owe an everlasting debt of gratitude. By untiring zeal and improved methods of manufacture most medicines are now offered to the public in forms agreeable to the taste and easy of administration. To realize something of the improvement that has taken place in this direction, compare the elegant triumphs of pharmaceutical art as it is to-day presented in elixirs and wines, gelatin- sugar- and chocolate-coated pills, with the bitter decoctions and infusions, the old-fashioned pills rolled in lycopodium, the bulky and nauseous powders, and that esophageal impossibility, the massive bolus of a hundred years ago. The man who invented the gelatin capsule should have his name written high on the scroll of fame and a monument erected to his memory by the pill-taking public. By use of this simple little device even castor oil becomes "a thing of beauty and a joy forever," and the bitterest enemy of the small boy becomes his cherished friend.

In the number of medical agents and ways of treating the sick there is an embarrassment of riches. The hundreds of the past century have grown into the thousands of to-day, and every year adds hundreds more. The tireless investigator has ransacked every known kingdom in his eager search after the materials of medicine. He has forced to his uses the trees and herbs of the woods, the flowers of the field, the roots of the ground, the minerals of the earth, the fishes of the sea, the wild animals of the forest; even the elements bow down before him; he has constant use for air and water, both hot and cold. Fire and electricity also serve his purposes. Animals that furnish none of the materials of medicine become useful for experimental purposes. He first tries his medicine on the dog. In his eyes something more than the hind legs of the frog is desirable; he uses the whole frog. Rats, mice, guinea-pigs, and rabbits are not beneath his notice; birds, dogs, cows, and horses serve other than domestic purposes; even his simian ancestor has not been neglected by the therapeutic investigator.

Turning from glittering generalities, mention may be made of a few of what may properly be designated as the special therapeutic blessings of the nineteenth century. In preventive medicine the greatest thera-

peutic gift of the eighteenth century to the human race was vaccination. It became a verity under the persistent conviction and advocacy of the immortal Jenner during the very last five years of the eighteenth century, and its practice was introduced into this country in the very first year of the nineteenth century. During the nineteenth century in all the civilized world millions of lives have been saved from smallpox by vaccination, and millions more have been spared the dangers of this loathsome disease and the frightful disfigurement that follows it. Formerly smallpox would decimate a country; in centuries previous to the nineteenth it killed more people in England than all other acute diseases combined; it would now soon become an unknown disease if all the people would submit to thorough vaccination. All this is the legitimate outcome of the single mighty discovery that was introduced with the greatest difficulty, and which at first brought only ridicule and abuse to the illustrious man who gave to suffering humanity the greatest example of preventive medicine the world has ever known.

Nearly a century later, and scarcely second to vaccination in its wondrous import, we chronicle the discovery and introduction of antitoxin as a preventive and positive cure for diphtheria. Had the last twenty-five years given us nothing else of therapeutic value, this one gift of antitoxin would mark it, as it will, as a red-letter era for all time to come. With this wonderful serum the bedside of the little sufferer from this dreadful disease may be approached with a confidence born of conviction that we can save, equal to our former doubt and inability to cope with this slayer of innocent childhood.

I would that I could stop to cite instances and statistics in support of the above assertion. What is true of this is true in lesser degree of antitoxins for many other diseases. Modern therapeutists believe that we are only on the threshold of discoveries respecting serum therapy, and it is confidently expected that many, if not all, infectious or germ diseases will be in the future amenable to cure by means of specific serums.

The priceless gift of *materia medica* to surgery was anesthesia. Nitrous oxide gas was discovered in the year 1800, chloroform in 1831, ether in 1846, and cocaine in 1884. The two greatest were the products of American genius. The wonderful and hitherto inconceivable achievements of modern surgery are made possible only through the beneficent agencies of these destroyers of pain, and yet practical use of anesthetics has been in existence for but little more than fifty years.

Quickly following the purification and concentration of medicines came, during the latter part of the century, the hypodermatic method of administration of them. By use of the simple little syringe medicines may be given in a manner most desirable and efficacious. With a patient unconscious and unable to swallow, or with a stomach rebellious and unretentive, and all other avenues of medication shut off, there is by this means a method at once rapid, safe, reliable, and accurate.

A most remarkable revolution that has taken place during this period is in the use of water as a therapeutic agent. It makes one shudder to recall the cruelty practiced upon the fevered sick in the denial of water to cool the parched tongue and quench the consuming thirst. At present, in glaring contrast, hydrotherapy is accorded an honored place in the science of healing the sick.

Heat is applied as a medicinal agent in many ways hitherto unthought of, and electricity is harnessed and pressed into admirable service in the relief of scores of diseases.

Does a sick man require exercise while yet in bed? He can get it through the trained hands of the masseur. Should he need more air, the druggist will furnish it as compressed oxygen gas. So it is common practice to prescribe fresh air or exercise to the bedridden very much as he gets his pills and lotions.

A very recent claimant to high position on our therapeutic honor roll is the normal salt solution. The judicious and opportune use of a solution of common table salt in plain water already has the credit of saving many lives, and it would seem that the half of its virtues has never been told.

Time fails me to tell of the various animal extracts, such as pepsin, pancreatin, thyroid extract, bone marrow, the adrenalin extract, and many others, all of which grow in usefulness as their possible virtues become better known.

Blood-letting is truly a lost art, but the same thing, when needed, is accomplished by causing through the action of medicinal agents rapid elimination of the watery portion of the blood through the several emunctories of the body.

The last therapeutic agent to be mentioned, the product of the past century, so prodigal in its gifts—one that has lurked in an embryonic state through all the ages past, but which has only reached its full development in the last few decades—is the trained nurse. Without

question, often the best order given for the sick man is to prescribe a trained nurse. Bereft of her, the practice of medicine would lose one of its most attractive and efficient agencies. With her immaculate dress, her dainty fichu and cap, her noiseless step, her deft hand, her winning, persuasive voice, her gentle presence, her faithful watching, her tireless energy, her constant care, her skilled touch, her trained and accurate observation, her kindly sympathy, she comes to smooth the pillow, to ease the pain, to listen patiently to the complaints, to calm the fears, to cheer the drooping spirit, to soothe the troubled mind—truly, she is the handmaiden of medical science, the right hand of the doctor, the very guardian angel of the sick-room.

LOUISVILLE.

NERVOUS DYSPESIA OR GASTRIC NEURASTHENIA.*

BY J. J. MOREN, M. D.

Gentlemen: This is a form of dyspepsia that is spoken of very frequently, and occurring in and accompanying so many and various diseases, and so often treated by "Oh, that is just a little nervous indigestion—it will get all right." I regard it an appropriate subject for this meeting. Nervous dyspepsia and gastric neurasthenia are one and the same disease. I believe that they both depend upon the condition of the nervous system, and to have a nervous stomach we must have a debilitated nervous system.

I will use the words nervous dyspepsia as a generic term, covering the gastric neuroses, which may be manifested in one of the three groups of symptoms, viz., motor, sensory, or secretory. First, what is a neurosis? It is a morbid, nervous state, with no known pathological change, in most instances—as in the gastric neuroses—characterized by excessive irritability and weakness. They respond morbidly to a slight stimulant and as rapidly exhaust. This irritability and weakness gives rise to a varied group of symptoms. The motor may predominate, as in the atonic conditions that follow exhausting diseases, as typhoid; the sensory, as in hyperasthenia or gastralgia; the secretory, as in hyperchlorhydria or hypochlorhydria, together with the nervous syndrome that accompanies each.

So nervous dyspepsia may be defined as a complex of symptoms for which we can not account by any anatomical change in the

* Read before the Alumni Society of the Louisville Medical College, March 25, 1902.

stomach visible to the naked eye or demonstrated with the microscope, or defined as digestion of food by a stomach enervated by weak and irritable nerves.

Etiology. It is most commonly met with in middle life. I have seen it in ages as early as seventeen and as late as fifty-three years. It usually occurs in the neuropathic, though it is very frequent in the anemic, and is frequently associated with diseases of other organs. You will see it often in women with pelvic disorders. Rectal trouble is an important factor. The syphilitic may fall victims during or after their course of treatment. It is common in students and men of letters; most frequent in those of sedentary occupation who have long hours for work and little time to eat. They forget that it requires nearly as much nerve force to digest an ordinary meal as it does to carry on their occupation one-half day. Rapid eating and poor mastication increases the work of the stomach and intestines. Another pernicious habit is carrying business and troubles to the table.

It follows frights, shocks, and any great emotional disturbance. Worry is especially important, particularly when associated with overwork and excess. The love of work is not a heaven-born gift. It is developed by stern necessity, and when fired by the American ambition often proves injurious. However, it is remarkable what the human body and mind can endure, provided excesses are avoided. It is the excesses that are hurting us. Long hours of work, then a few hours down town with sexual excess, alcohol, and tobacco, and the highly spiced and seasoned, or what is worse the miserably cooked food of the boarding-houses; this, followed by short hours of sleep, will make gastric neurasthenics out of many of us. Over-cooking of food, fried dishes and the warming over of these are detrimental. Excessive tea and coffee drinking is injurious. Too much liquid at meal time is an important factor, especially in the motor or atonic form. Unfortunately but few can be accused of drinking too much liquid, especially water. Just notice and see if these poor water-drinkers don't complain of nervousness and constipation. Could you expect otherwise in one with desiccated nerves fed with blood charged with the various toxins and toxic compounds resulting from faulty elimination? Fear of becoming a dyspeptic is important. They rush through with their meals, and, as any one would, they feel full and uncomfortable; now they take advantage of these wonderful dyspepsia tablets, as advertized on every corner to cure any case or form of indigestion. With the use of these they diet themselves, "so-called."

Symptoms. From outward appearances one would not class the majority as dyspeptics, their nutrition being good, skin clear and with a good color, but those that are constipated will have a sallow complexion. The face always shows a depressed and worried expression. Physically they are all right. Headache is a common symptom, either frontal or the helmet lead-cap headache of Charcot. Sleep is broken and disturbed by dreams, awakening in the morning tired and unrefreshed. An indescribable nervousness troubles them a great deal, especially about meal time; in some it is before, in others it is after meals. When at their worst they lose interest in their work, become depressed and morbid. Their appetite may vary from anorexia to bulimia, but as a rule it is very good, though they are afraid to eat. There may be a burning, gnawing, thumping, or empty feeling in the stomach; in some cases this may amount to a slight colicky pain, but the majority suffer but little pain. Some are at their best after a full meal, others when the stomach is empty. The Ewald-Boas test-breakfast shows no evidence of dilatation. Free HCl may be normal, increased or diminished, varying with the presence of hyperchlorhydria or hypochlorhydria; no mucus or evidence of structural change. Their bowels move regularly in most cases, and the stools are dry, hard, and lumpy, and may contain a great deal of mucus (muco-colitis). Dieting seems not to affect them in any way; the easiest-digested food may cause the most distress, or the most indigestible may be handled with ease. However, if hyperchlorhydria is present the starches will give the most trouble, and in hypochlorhydria the meats. In all neurotics it is a known fact that they can not handle much sugar, and it is one of the first articles of diet avoided. To illustrate the different forms I will report the histories of a few cases that I have met.

1. *Hyperchlorhydria.* Mr. D., farmer, age thirty-five. Family history good; is strong, well-built, and well nourished. Has had no serious illness of any kind. For the past year has had financial trouble and cause for a great deal of worry. He first noticed that his sleep was unrefreshing, with dreams; then he had trouble in going to sleep. His appetite was good, but after meals he would have a sour stomach; it would come on about two hours after eating—worse after a meal of starches or sugar. Gas eructations after meals. Test-meal showed two and one-half times the normal amount of free HCl; otherwise the test was normal.

2. *Hypochlorhydria, with dyspeptic asthma.* Mr. A., farmer, age thirty-eight, good family history and health. While working in the

field he was frightened and noticed he began to belch, but paid no attention to it. Afterward he was bothered with belching odorless gas, shortness of breath; could sleep but little. All of his symptoms were worse after meals. Test-meal showed a marked diminution of HCl.

These two cases will serve to illustrate the importance of the test-meal, and show how one set of symptoms may predominate. The motor and hyperasthenic types may follow the same rule; however, you may meet them combined.

3. *Nervous dyspepsia or gastric neurasthenia.* Typical case. Mr. S., a professional man, age forty-two, was nervous and a hard student; has had no serious illness and is physically in good condition. While at school he suffered from indigestion, and after engaging in his profession it gave him more trouble. He tried any and every thing. Diet did not affect him in the least. He noticed that after mental work or worry he was worse. To-day, after suffering for twenty years, and living on the blandest diet, he is only a few pounds short of his normal weight. He is nervous, irritable, suffers from sleeplessness; has a good appetite, but is afraid to eat. His stomach feels heavy and distressing; no sour or burning sensation. One diet seems to agree with him as well as another. If his business does not go as he likes it he is upset in every way, cross and crabbed to strangers as well as to friends. Test-meal showed a normal secretion. His stools are dry, hard, and lumpy, and at times he passes a great deal of mucus.

Diagnosis. As an aid in diagnosis, I can not overestimate the examination of the stomach contents after a test-meal. This is one of the most important measures, and is often neglected. It not only helps to exclude organic diseases, as cancer or gastritis, but it makes clear the existence of the functional disturbances, as hyperchlohydria and hypochlohydria, and gives us a rational basis for diet and therapy.

In nervous dyspepsia the duration of symptoms are out of proportion to the disturbance of nutrition. The symptoms are dependent upon and influenced by worry, emotion, and fatigue far more than in any other condition. The intermittent, remittent, and variable symptoms, not influenced by the diet, are all peculiar to this functional disorder.

Differential diagnosis must be made from chronic asthenic gastritis, ulcer, cancer, dilated stomach, and intestinal indigestion.

In gastritis the symptoms are digestive; appetite diminished, especially for meats; emaciation may occur early. Test-breakfast shows diminished HCl and mucus in quantities.

Cachexia, tumor, with absence of free HCl and presence of lactic acid, are characteristic of cancer. Ulcer is recognized by the severe and localized pain, with increased hydrochloric acid.

In dilated stomach the stomach-tube reveals retention of food, with fermentation and gas.

Intestinal indigestion. The symptoms occur some time after a meal, and located in the bowels. Flatulency and morning diarrhea are somewhat characteristic.

Prognosis is good as to life, but the disease often stubbornly resists treatment.

Treatment. The most essential thing is diet. If I had to select any one measure in treatment, it would be diet. What diet is best? This I can not answer, for what is agreeable to one will disagree with another. The only way to determine the most rational diet is, first, by the test-meal, which enables you to select those articles that are agreeable to and in keeping with the secretions, *i. e.*, avoid starches in hyperchlohydria and meats in hypochlohydria; second, exclude all irritating foods, as highly seasoned and spiced foods; third, avoid the fermenting foods, as fresh bread, sugar, and liquors, etc. Hydrotherapy and electricity are good tonics, and when properly applied will relieve many of the nervous symptoms. For the medicinal measures I have nothing new, unless it be that I use as little medicine as possible, and the earlier I get them off of medicine the better I feel. Sometimes it is necessary to give acids, hydrochloric or nitro-muriatic. Pepsin is rarely indicated; better diastase. Intestinal antiseptics are often useful; of these I like small doses of mercury, best red iodide or the bichloride; ichthyol is a good substitute. Encourage exercise, water-drinking, cheerful moods, and above all make them let their stomachs alone.

LOUISVILLE.

ACUTE ARTICULAR RHEUMATISM.*

BY P. H. CRUTCHFIELD, M. D.

Member County Board of Health of Henry County, Kentucky.

The pathology and etiology of acute articular rheumatism is by no means a settled question, but is generally believed that the immediate cause is the presence in the blood of some morbid material generated within the system in consequence of some derangement of the nutritive and elementary processes which acts as a direct irritant to the tissues. This agent is presumed to be a normal constituent of one of the ordinary secretions or excretions, only accumulated in excess, and the common opinion being that it consists of lactic acid.

Another view maintained as to the origin of this disease is that it is due to some disturbance of the nervous system. It is claimed that this disease has been produced experimentally by a puncture into the floor of the fourth ventricle.

Hutchinson has called this disease "catarrhal arthritis," and is of the opinion that the main liability to joint disease is brought about by exposure to wet and cold through the reflex nervous influence. Another view is that the nervous centers are affected by the lactic acid—that it reacts upon the joints, while still another view is that a premonitory disturbance of the nervous system leads to disorder of nutrition and the consequence of lactic and other acids which directly cause the symptoms of this disease. Still another view maintained as to the pathology of this disease is that it is due to a substance formed in the tissues known as "glycocine." Glycocine is derived from glycocholic acid, a constituent of the bile, which is normally transformed in the intestines into this substance and cholic acid. Glycocine passes to the liver, and is there changed into urea.

Hunter has advanced his germ theory as to the cause of rheumatic fever, supposing that the micrococci enter the system and set up endocarditis, the joint affection being secondary to this and due to an embolism. He claims that the micrococci have been found in the blood in serous and synovial effusions; he claims that he has reproduced the disease in small animals by injecting a cultivated specimen of micrococci obtained from the articular fluid of patients suffering from this disease.

* Read before the Henry County Medical Society.

Exciting Causes. The ordinary exciting causes of rheumatic fever is a sudden chill induced by exposure to wet and cold, and exposure to draughts when heated or perspiring, neglecting to change wet clothing, or various other ways. It may be produced by extra muscular exertion, and in not a few cases no definite cause can be fixed upon; errors in diet, digestive and hepatic derangement; in women, suppression of the menses, excessive lactation, and various other causes. In some instances scarlatina is followed by acute articular rheumatism, perhaps due to interfering with the excretory function of the skin.

Predisposing Causes. It is distinctly a hereditary disease, and it chiefly attacks persons from ages of twenty to thirty-five, but no age is exempt. Previous attacks increase the predisposition to the disease. More cases are met with in males and in the lower classes of patients, on account of their greater exposure to the exciting causes. A state of ill-health from any cause may predispose to the disease, as well as mental depression or anxiety, but a patient may be attacked with the disease when in perfect health; joints which have been used a great deal, or which have been injured, are much more liable to be attacked than others. Occupations involving exposure and hard work predispose materially to the disease.

Anatomical Characters. The morbid changes associated with acute articular rheumatism are chiefly evident in connection with the fibrous and synovial structures; a variable number of joints of the limbs present signs of acute inflammation. The synovial membrane is very thick, relaxed, and vascular; there may be more or less lymph, and the joints may contain a quantity of fluid effusion; the tissues around the affected joints are infiltrated with fluid.

In cases of long duration pus may form, and the cartilages may become eroded. In the majority of cases where death occurs from rheumatic fever the morbid appearances characteristic of pericarditis, endocarditis, and myocarditis are visible. Fibrous vegetations are common in the heart when no inflammation exists; evidence of pulmonary and other complications may exist. The blood contains an excess of fibrinous elements, and becomes buffed and cupped on coagulation; it is doubtful whether lactic acid can be detected in the blood or not.

Symptoms. 1. The stage of invasion. An attack of acute articular rheumatism may begin gradually, being preceded by a state of ill-health for some time, but usually the attack is marked by chills or distinct rigors. These symptoms are followed by pyrexia, and soon the joints and other structures become affected.

2. The actual attack. When acute rheumatic fever is established the symptoms are very characteristic, being both general and local, the latter being connected with the joints.

General Symptoms. The patient complains of a general aching and stiffening of the joints; presents an aspect of pain and suffering combined with restlessness, and being frequently unable to move without great pain may be quite helpless. There is usually a copious perspiration, acid in reaction, and which has a peculiar sour smell. This is not invariably the case; the sweat may be acid, neutral, or even alkaline in reaction. Sudamina may appear on the surface, coming out in successive crops. Together with the ordinary symptoms accompanying pyrexia, the pulse is full and strong; the tongue is thickly coated. There is much thirst, with anorexia and constipation. There is usually a great deal of pain in swallowing. The urine is febrile, deposits urates abundantly, and sometimes contains a little abumen. Sometimes the disease assumes a typhoid character. It is the middle-sized joints that are mostly affected, *i. e.*, elbows, wrists, knees, and ankle-joints, but the other articulations are by no means exempt. Usually many joints are involved in succession, assuming an erratic tendency. After the symptoms subside in one joint they may appear in another, and several joints may be implicated at the same time, and some of the joints may be attacked more than once in the course of the disease. An affected joint is swollen, red, hot, very sensitive to touch, and the amount of enlargement varies; the swelling is due partly to infiltration of the tissues around the joint and partly to an infiltration into the interior. The skin may pit on pressure; the pain is usually worse at night, in character being dull and aching; the pain may be so severe that the patient may cry out.

Diagnosis. Gout is the chief disease from which rheumatic fever has to be distinguished, although at first the disease may simulate erysipelas, dengue, and influenza; also symptoms occurring during apyrexial periods of relapsing fever may resemble those of acute articular rheumatism; sometimes local inflammations of joints resemble rheumatic fever. Given the above symptoms, with the fever, stiffening, swelling, and location of the pain, rheumatic fever can easily be diagnosed.

Prognosis. As regards life or death the prognosis is very favorable, but the prognosis may be grave with regard to the future condition of the patient, on account of the organic trouble that it may cause. The

main symptoms of immediate danger are a very high temperature, or one remaining high for some time, severe nervous disturbance, extensive complications affecting the heart or lungs, cerebral or spinal meningitis, and deficiency in excretions.

Treatment. The main indications which need attention are: (1) to see to the general comfort of the patient; (2) to protect the patient from any draught; (3) to encourage free excretion; (4) to get rid of and neutralize the poison in the blood; (5) to see that the affected joints are in a state of rest; (6) to prevent complications; (7) to keep the temperature within the bounds of reason.

A word as to the pyrexia in this disease. It is of an irregular intermittent type, the ascent lasting about one week, but it may be longer or shorter than this. The temperature usually ranges from 100° to 104° F., and is generally in proportion to the number of joints affected and the amount of swelling and inflammation. The implicated joints may indicate a higher temperature than other parts. Rheumatic fever is one of the diseases in which hyperpyrexia is most frequently noticed.

General Treatment. Patients suffering from this disease should be placed in a comfortable room, preferably between two blankets, the joint or joints made comfortable and easy by means of pillows; should guard against chills from a draught; it is good practice to wrap the joints in cotton wool, removing this when the cotton becomes impregnated with perspiration.

Diet. The diet in this disease should consist of a quantity of good nutritious food, such as beef tea, milk, eggs, soups of various kinds administered at regular intervals, ice to suck if there is much thirst. Alcoholic stimulants are not, as a rule, needed until convalescence is established; if used, should be in the form of egg-nog. The bowels should receive special attention; keep them acting regularly by some mild laxative.

Therapeutic Treatment. No routine treatment can be outlined in treating rheumatic fever, from the fact that each patient has his or her peculiar idiosyncracies.

Local Treatment. All of the implicated joints must have special attention and be made comfortable and easy. If the pain in the joint is very severe, hot fomentations and anodynes should be used (those that contain opium and belladonna), but for quick relief for the joints I have found nothing better for local application than antiphlogistic

ointment applied on a cotton cloth about the thickness of a silver dollar, warmed and applied to the affected joint, and allowed to remain there for twenty-four hours, then removed and applied again. Should there be an effusion of fluid into the joint this treatment would not reach it; therefore, would use the aspirator and remove the fluid. Many times some of the affected joints have a tendency to remain stiff after all of the other symptoms have disappeared; if such be the case, paint the joint with equal parts of ichthyol and glycerine, applied until all the affected joint is covered. This, with potassium iodide internally, will in the majority of cases relieve the stiffness in a reasonable length of time.

Drugs. Until the last few years the alkaline treatment was most in vogue, and I believe it does good in many cases. Now, in carrying out this treatment, bicarbonate of potassium was mostly used in heroic doses, from thirty to forty grains every three to four hours, but I prefer the vegetable salts, from the fact that they can be made into a pleasant drink and will agree with the most delicate stomach. But the drugs that have stood the test in this disease, and which are now mostly used by physicians, is salicin, salicylic acid, and salicylate sodium, especially the latter. This drug is best given in large doses, from ten to thirty grains every two to four hours, as the case may demand it. This drug helps to check the disease, lowers the temperature, and relieves joint symptoms; also *vinii colchii seminis* is used to great advantage in some cases. A citrate of potassium should be given from the first, made into a pleasant drink, for its diuretic action, thereby aiding elimination of poison by the kidneys. Aromatic spirits ammonia acts well; it has a twofold action—it acts as a heart stimulant, and aids the action of the kidneys.

The Heart. The heart should receive special attention from the first, on account of the organic complications that rheumatic fever is liable to set up. For this I think there is nothing better than strychnia and nitro-glycerine. Strychnia one-thirtieth grain should be given to an adult every four to five hours all through the disease, alternating with the nitro-glycerine. Opium is a drug of much advantage in this disease; it is best given in the solid form. This drug not only relieves pain, produces sleep, and sustains the nervous system, but it calms an excited cardiac action and tends to prevent inflammatory complications. Morphia is sometimes needed; if used, it should be used hypodermatically. Among other remedies used

in this disease may be mentioned nitrate and iodide of potassium, benzoate, and phosphate ammonia. Quinine is useful in many cases. Iron is useful in convalescence, especially if there is much anemia and weakness. Patients convalescing from rheumatic fever should be advised to take the very best care of themselves until convalescence is thoroughly established.

BETHLEHEM, KY.

MEMOIR OF DR. J. M. MEYER.*

Dr. Meyer was born December 1, 1817, at Barnwell, South Carolina. He received his preliminary education in his native county; came to Kentucky in February, 1835; matriculated at Centre College; was graduated with the degree of A. B. in September, 1840, and was made Master of Arts from this same school of learning in September, 1843. In the fall of 1840 he became a pupil of the illustrious Prof. Benjamin W. Dudley, of Lexington, who was not only a distinguished lithotomist, but a philosopher as well, and his student was wont to say of him that with his neatness and systematic habits he had taught him how to live.

From the Medical Department of Transylvania University he was graduated as Doctor of Medicine in March, 1843. For the practice of his profession he returned to Boyle County and located on Salt River, not many miles from Danville. On December 12, 1844, he was married to Mary, a daughter of Captain Samuel McDowell, with whom he lived most happily until her death, which occurred on July 1, 1886. Dr. Meyer left five children, viz., Joseph, a physician and surgeon of Paris, Texas; Oscar, of St. Louis; Thornwell, of Danville; Florence, of Talladega, Ala., and Mrs. W. S. Lyne, of Lexington.

He did an arduous country practice, being at one and the same time physician, pharmacist, and nurse, on Salt River, from 1843 to 1891, at which time, because of some financial misfortunes, he removed to Danville, where the last of his life was spent. He did a great deal of practice among the poor and needy, for which he received and expected no compensation.

When he had reached his seventieth anniversary he thought he would quit practice; but, as he said, with a sound body and cohesive intellect it was conclusive to him that it was better to wear out rather than to rust out. The result was, as he pleasantly wrote, that his last were his best years, more profitable to patient and doctor than any ten years of his history.

* Read at the meeting at Hastneville, Ky., January 16, 1902.

In politics he was a Democrat; in religion a devoted Presbyterian. He believed the tenets of his church to be the highest, purest, and most scriptural code to which the world had ever attained. He was an elder in the First Church at Danville for more than forty years, and his counsels in the session were always conservative and wise. He was also a firm believer in a Christian education, and gave liberally of his means to accomplish that end. In medical polity, as he wrote of himself, "I am all-pathist." He entertained the view that every created thing God has given was for some wise purpose, if we only knew how to use it; hence, in practice he employed any and every agency that would relieve suffering mortals. He said, If water is best, I am a hydropathist; if there is but little demanded, a homeopathist; if vegetables are required, a vegetarian, and so through the list. While he placed reliance on nature, and never forgot that he and his remedies were also parts of nature, it must be said of him that he was a firm believer in the efficacy of drugs for the cure and alleviation of disease. English calomel was his Samson. His hobby, however, was to teach, preach, and practice the gospel of temperance. He had, as it appeared to us, some peculiar ideas as regards articles of diet and dress; cotton was king in every season. His respect for the ethics of gastronomic morality was such that he was willing almost to legislate against criminals in that line. In early life he suffered from indigestion, and knowing that this is always a prelude to dyspepsia he determined to overcome it, and he did so, not by physic, but by abstemiousness—not partaking of eatables which he knew were antagonistic and which would produce pitched contests in his anatomy. He reasoned that if the gods were just to him they would be to every one who would give their gastric powers a fighting chance. By strictly adhering to an easily digested and nutritious dietary, with an abundance of registered Jersey milk, with those hygienic measures which would keep him above the normal, he retained full feeding health to a green old period, departing hence, after a short illness, on Thursday, September 5, 1901, aged eighty-four years, seven months, and one day.

Our subject was not a man of vaulting ambition, nor was he fond of the "vain pomp and glory of this world;" he cared little for the honors and plaudits of men; but, like the great majority of his guild,

"Far from the madding crowd's ignoble strife,
Their sober wishes never learned to stray;
Along the cool sequestered vale of life
They kept the noiseless tenor of their way."

He was noted for his many charitable and self-sacrificing acts. He carried his good humor always with him; he marked no hours but sunny ones, his desire being to radiate health, cheerfulness, and goodwill. At the bedside of the sick these characteristics were always in evidence. You may all remember, so distinctly, his manner of speech when discussing a subject before this Association. When he arose and said, "Mr. President," the attention of every one was engaged. He was a fine gentleman of the "old school." Those who knew him best speak of his integrity, his tender sympathy, and unswerving faithfulness to duty; but in matters pertaining to principle he was unyielding, strong to do the right, equally so to rebuke the wrong. If our information is correct, he was never affiliated with but two medical organizations, the Boyle County Medical Society and this Association, to both of which he was an unfailing attendant, loyal and devoted. At the January meeting of this Association, in 1882, he was unanimously elected to the presidency, and served his term most acceptably, without hitch or friction. In April, 1883, upon a previous invitation, this Association convened at his country home in regular session, to hear his valedictory address and enjoy his hospitality. Never were brethren more royally entertained, wined, and dined.

His last appearance before this Society was on the third Thursday in July last at the meeting in Danville, at which time he contributed a short paper setting forth the virtues of linen—mesh underwear. He came in late, and it was apparent that age had withered him; his variety and vivacity had departed, the coherency of halcyon days was absent, and, unlike his custom—for he always came early and stayed late—he soon made his exit.

Surely no funeral is like unto that of a doctor for pathos. A peculiar sadness must have fallen on that company as the body of this old friend and associate was carried out to its last resting-place; he who had been their thoughtful counselor in matters medical for more than half a century—who had beaten back death time after time from their door—who had saved them, but had not been able to save himself. Peace be with him!

Respectfully submitted,

STEELE BAILEY, *Chairman.*

L. B. COOK.

I. S. WESLEY.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE—SECTION ON ORTHOPEDIC SURGERY.

Meeting of January 17, 1902, George R. Elliott, M. D., Chairman.

Dr. W. R. Townsend presented a baby four months old, showing a mild type of webbed fingers. The webbed hand was smaller. The fore and middle fingers of one hand showed the web; no other congenital deformities present.

No explanation was offered to account for the extreme smallness of the webbed hand.

Hemi-hypertrophy of the Bones of the Face and Head. Dr. Townsend also presented the case of a girl four years old. The right side of the face and head seemed larger. When first seen, edematous tissue over the back of the head rendered it difficult to determine whether the bones were enlarged or not. The edema subsequently decreased, and an increased size of the occipital and right parietal bones was manifest. The frontal bone was not involved, but the right inferior maxillary bone appeared enlarged. There was no history of syphilis; lower extremities were developed. The child had an enlarged abdomen and the deformity known as chicken-breast. The exact diagnosis was puzzling; the question was whether it was leontiasis or rachitis.

The Aspiration Treatment of Abscesses. A patient was also presented by Dr. Townsend—a boy eight years old, who January 9, 1901, gave the history of hip disease of one year's duration. There was an abscess on the outer aspect of the thigh which was aspirated April 6th; it refilled, and was again aspirated on April 29th, and again on May 11th. The abscess did not recur. The case was presented to illustrate the successful treatment of these abscesses by aspiration.

He said abscesses not interfering with application of braces and not burrowing, and those not in a condition of mixed infection, could be safely let alone or aspirated.

Dr. Nathan stated that, after careful study of the literature of reported cases of leontiasis ossea, it did not appear that there was any agreement between authorities reporting the cases as to the definite

lesions constituting this condition. All the reported cases differed from one another, and the case presented differed in many respects from all cases noted in the literature of the subject. He said that originally in the case presented there was a distinct cleft in the occipital bone. There was certainly some enlargement of the occipital bone as determined by measurements, but the hypertrophy of the soft parts over the lower maxilla made it difficult to measure that bone.

Dr. V. P. Gibney, in discussing the case of abscess treated by aspiration, presented statistics from his private records of twenty-three cases treated by aspiration, fifteen of which were cured. Of these fifteen, in three cases the aspiration was done once; in four cases, twice; in four cases, three times; in four cases, four or more times. Of the remaining eight, three were aspirated once, but the needle was large and caused leakage and sinus formation; four were aspirated twice; in one, spontaneous opening took place a few days later. In all cases where cure failed there was no damage done by the aspiration.

Dr. T. Halstead Myers expressed himself as in favor of non-operative treatment when the tubercular abscesses were not infected and were not interfering with the patient's health or threatening another joint. He had seen many cases cured without operative interference, and considered this best in dispensary practice; aspiration should be tried before more radical operative measures.

Dr. R. H. Sayre said that he had aspirated frequently and sometimes secured good results, sometimes not. He had seen many cases get well without treatment, and cited one case of recurrent abscess of the thigh; if these abscesses could not be opened and kept surgically clean he advised aspiration, and if this were not practicable to let them alone.

Dr. George R. Elliott asked Dr. Gibney if his statistics included any spinal abscesses.

Dr. Gibney replied that they referred to abscesses connected with the hip only. He further stated that he had had cases of spontaneous disappearance, but that most of the psoas abscesses had been of long duration, that had been given up under the expectant plan of treatment.

Torticollis. Dr. Royal Whitman presented the case of a boy twelve years of age, illustrating treatment of severe torticollis by the open

incision, with over-correction of the deformity. The operation was performed November 7, 1901, and resulted in correction of the deformity with no limitation of motion.

Dr. J. P. Fiske asked Dr. Whitman what structures were cut.

Dr. Whitman replied that all resistant structures were divided—the two insertions of the sterno-cleido-mastoid muscle and the cervical fascia being the most important.

Dr. Myers said the operation should be done early. He had seen cases left until the individual was fifteen years old, in which the sternal ends of the clavicles had been partially dislocated upward by the short sterno-cleido-mastoid; this was a difficult deformity to correct.

Congenital Anterior Displacement of the Hip. Dr. Whitman presented a girl five years old, illustrating congenital anterior displacement of the hip. He said ordinary methods of replacement were not successful in such cases, and whatever treatment was adopted must be supplemented by osteotomy of the femur, otherwise the head of the bone would be displaced when the parallelism of the limbs was restored.

Dr. Fiske said he thought the condition should be regarded as a superior displacement rather than anterior.

Dr. Whitman replied that he understood the term congenital anterior displacement of the hip as indicating that the head of the femur was directed forward, lying below and to the outer side of the anterior superior spine.

Congenital Dislocation of the Hip Cured by the Lorenz Method. Dr. Whitman also presented a child aged three years. The non-cutting operation had been performed one year previously. The plaster bandage was worn only seven months. This illustrated the fact that in certain cases of a favorable type cure might be accomplished in a short time—cure meaning both as to function and position. It was impossible to say from observation which hip had been originally displaced.

Double Congenital Hip Dislocation Treated by the Open Method. Dr. Whitman presented a patient, a girl seven years of age, upon whom he had operated by the open method three years previously. The patient now walks with but slight swaying of the body; the lordosis has completely disappeared, and the permanency of the case is assured by the lapse of time; there is practically no restriction of normal motion.

Dr. Elliott asked if the two operations were performed at the same time, and if much acetabular scooping had been done.

Dr. Whitman replied that the operations were performed about three weeks apart; the heads of the bones in this case were easily replaced, and very little scooping was necessary; he considered one advantage of the scooping was that it caused adhesions, which bound the bones more firmly and prevented subsequent displacement; the amount of scooping differed in different cases, some requiring a great deal, while in others simple arthrotomy might be sufficient. He further stated that after operation of this character the fixation bandage should be employed for many months, exercise and passive motion being useless until complete repair had taken place. In one instance he had fixed the limb for eight months, and at the end of that time the motion was far less restricted than in the majority of cases in which the restraint had been removed soon after the operation.

Phocomelia. Dr. Henry Ling Taylor presented the case of a girl five and one half years old, the second of four children; no developmental anomalies in the family. The mother stated that the feet presented, and that something was wrong with the shoulder at birth which was rectified by the physician. When the child began to walk, at fourteen months, a slight lameness on the left side was noticed, which has persisted. Motion at the hip was normal, but the left leg was two inches shorter than the right, the shortening confined to the femur; the trochanters were in normal position and the classical signs of congenital dislocation and coxa vara were absent. He offered the diagnosis of congenital shortening of the left femur, confirmed by a skiagraph, which showed the femur to be short and small. The points of interest were the differential diagnosis, the slight lameness with considerable shortening—which was the rule when the joint motion and muscular power were good—and the absence of true lateral curvature, with a markedly sloping pelvis, which was also the rule.

Dr. Elliott asked Dr. Taylor for the etymology of the word "phocomelia."

Dr. Taylor replied that it was derived from two Greek words meaning seal and limb, the combination being equivalent to "flipper deformity." The term had reference to imperfect development in length of one or more of the long bones of the extremities.

Dr. Sayre considered that the term phocomelia should be restricted to the extreme cases in which the long bones were either absent or almost entirely so.

Dr. Taylor stated that Kummel, Klaussner, and other authorities applied the term to such cases as the one presented.

Webbed Fingers (Operation). Dr. Alfred Taylor presented a case of web fingers. The case was operated on recently, but some of the fingers were in a condition to show the results of the operation. The patient, a boy, was born with three fingers of each hand entirely webbed to the tips. On the middle and ring fingers of both hands the bases of the terminal phalanges had grown together; the little finger showed no bony union. The first operation was done in November on the little finger of the left hand. Later the entire condition of the right hand was relieved by operation. The method was to make an incision on the dorsum of one finger and palmar surface of the other, dissect up the flaps, using the opposite flaps to cover the fingers.. In the little finger primary union was obtained. Instead of making a cross-cut at the base of the flap, or instead of making a V-shaped flap, the incision was simply carried the full distance up toward the web in each case; then it was found by suturing the edges together that the edge of one flap would obliquely cross the edge of the other, crossing in opposite directions, the two edges meeting in the middle. This method worked very well.

Dr. Sayre read a paper entitled "The Operative Treatment of Webbed Fingers, with Presentation of Cases."

Dr. Sayre reviewed briefly the classical methods of operation, and illustrated on a model his method of operation, by making a flap for one finger and grafting to cover the other, and taking an A-shaped flap from the dorsum of the hand, slipping it over and stitching it to the palm to form the bottom of the web. In methods which did not employ a graft from some other part of the body to cover the inner side of one finger, the effort was made to cover a defect with insufficient material, since the web connecting two contiguous fingers was much less extensive than the amount of skin which would cover the contiguous margins of those fingers normally and pass into the interdigital cleft. For demonstration, a stuffed glove of one color was slipped inside of one of a different color, the fingers of the latter being sewed together to represent webbing after the removal of the piece of kid lying on the contiguous sides of the webbed fingers.

Dr. Myers considered grafting a great improvement over other methods in these cases. Only the bottom of the cleft need be covered by a flap.

Dr. V. P. Gibney stated that he had always used the Didot method of operation, but thought Dr. Sayre's plan an excellent one.

Dr. Sayre presented a patient upon whom he had operated for webbed fingers. The fingers were webbed to the tips and the phalanges united by bony union. The case illustrated the method of making a flap for one finger and using skin graft for the other.

Reviews and Bibliography.

The Practical Medicine Series of Year Books. Comprising ten volumes of the year's progress in medicine and surgery. Issued monthly, under the general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume III, The Eye, Ear, Nose, and Throat. Edited by CASEY A. WOOD, C. M., M. D., ALBERT H. ANDREWS, M. D., T. MELVILLE HARDIE, A. M., M. D. December, 1901. The Year Book Publishers, 40 Dearborn St., Chicago.

This is one of a series of year books on Practical Medicine. It contains some three hundred and fifty pages, and is fully in keeping with all of the advances of medicine and surgery of which it treats; the chapter devoted to the mastoid diseases is alone worth the price of the book.

A Manual of Ophthalmoscopy. For Students and General Practitioners. By J. E. JENNINGS, M. D. (Univ. of Penna.), author of "Color Vision and Color Blindness," etc.; formerly Clinical Assistant Royal London Ophthalmic Hospital; Member of the American Medical Association, etc. With ninety-five illustrations and one colored plate. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia. 1902. Large 12mo. Price, \$1.25 net.

This is a book of two hundred pages, intended for the use of practitioners of medicine. It is very well illustrated with photogravures, and the book itself is an ideal from the book-maker's standpoint. It contains nine chapters, as follows: First, ophthalmoscopy; second, ophthalmoscopic; third, examination of the media of the eye; fourth, normal fundus; fifth, congenital anomalies; sixth, diseases of the choroid; seventh, diseases of retina; eighth, diseases of the retinal vessels, and ninth, diseases of the optic nerve.

The author tells us that this is an elaboration of a series of lectures delivered before the graduating class of the Bonmont Medical Hospital, of St. Louis. The book is thoroughly up-to-date in every particular, and those who desire such a work can not do better than to purchase it.

Text-Book of Histology, including the Microscopic Technic. By Dr. PHILIP STOHR, Professor of Anatomy at the University of Wurzburg. Fourth American, based upon the ninth German edition. Translated by Dr. EMMA L. BILSTEIN, formerly Director of the Laboratories of Histology and Embryology, Woman's Medical College of Pennsylvania. Edited, with additions, by Dr. ALFRED SCHAPER, Professor of Anatomy, University of Breslau; formerly Assistant Professor of Histology, Harvard Medical School, Boston, Mass.; formerly Docent of Anatomy and First Assistant at the Anatomical Institute of the University of Zurich. With three hundred and seventy-nine illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1901.

This is the fourth American edition, based upon the ninth German edition, and is in every way up to the high standard of its predecessors, and the student-practitioner who wishes to engage in this will find everything in Stohr's histology that he needs.

A Guide to the Microscopic Examination of the Eye. By Prof. R. GREEFF, Surgeon to the Ophthalmic Department of the Royal Charite Hospital, Berlin. Translated from the second German edition by HUGH WALKER, M. A., M. R., C. M., Assistant Surgeon and Pathologist to the Ophthalmic Department of the Glasgow Royal Infirmary. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street.

The title of this book is rather unique, and unless you examine it critically the title would hardly indicate the real nature of the book. It treats of the microscopical examination of the tissues of the eye, giving full details of the manner of preparing all of the tissues for the microscopic examination and the staining and preservation of the various structures of the eye. We commend it to those of our readers who wish to engage in that kind of practice.

Psychopathia Sexualis, with Especial Reference to Antipathic Sexual Instinct. A Medico-forensic Study. By Dr. R. V. KRAFFT-EBING, o. o. Prof. fur psychiatrie und nervenkrankheiten an der K. K. Universitat Wien. The only authorized English translation of the tenth German edition. By F. J. REBMAN. Chicago: W. T. Keener & Co., 90 Wabash Avenue. 1901.

Like all works of Dr. Krafft-Ebing, this one takes high rank from a scientific standpoint. It is a thorough exposition of everything pertaining to sexual perverses; it is a rare collection of facts pertaining to this subject. It contains reports of many very interesting cases, and is well worth the consideration of the jurist as well as the doctrinal. The book is not intended, however, for the general public; its uses should be confined to doctors, lawyers, and ministers.

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H. A. COTTELL, M. D., M. F. COOMES, A. M., M. D., Editors.

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JOHN P. MORTON & COMPANY, Louisville, Ky.

THE CONSTITUTION OF THE KENTUCKY STATE MEDICAL SOCIETY.

The profession of this State should remember that there never has and never will be a meeting of the State Medical Society which will be more important than the present one. The amalgamation of the county, State, and national associations demands that a change should be made in the Constitution of the State Society so that it will conform to the new state of affairs, and every doctor in the State should be interested in this change, for with it every practitioner of medicine in the State who conducts himself properly will have a hearing in the affairs of all the medical-society work in the country if he desires it. It should be remembered that this change is for the betterment of the medical profession as a whole, and we are sure that in the end it will work a wonderful change. It will bring about an organized effort on the part of the whole profession of this country to elevate the standard of medicine, not only in the schools of medicine, but those who have received their degree will be improved by constant association with their brother practitioners. They will be stimulated to investigate, to read, and to secure better instruments, and in fact to prepare themselves in every way to more fully meet the demands of their patrons. If the profession is not materially bettered by this union of all of its members into one grand organization it will be for the want of energy to carry out the proposed plans.

UNIVERSITY OF LOUISVILLE, MEDICAL DEPARTMENT.

The Sixty-fifth Annual Commencement of the University of Louisville was held at Macauley's Theater, March 28, 1902, when the following address was delivered by Judge Pirtle, President of the Board of Regents. At the close of his address he conferred the degree of M. D. on thirty-one graduates.

Gentlemen: I deliver to each of you, in addition to the diploma which admits you into the medical profession, the Code of Ethics, which the American Medical Association has placed in my hands for you. This code is to be studied and mastered. It teaches your duty to your brethren, to your patients, and to the State, and their duty to you. It is a code that the doctor may be proud of, for there is not a word in it but springs from the loftiest morality and sense of honor. The physician is first of all a gentleman; no other man is placed in so many situations where the qualities which make the gentleman can be so well exemplified. We can not tell how many centuries, or tens of centuries, civilized man has been upon the earth, but we do know that in all times and among all nations the gentleman has been the same—considerate of others, kind, true, honorable.

I have been reading lately translations of the oldest manuscript in existence, the Papyrus Prisse, which was discovered about fifty years ago, and is now in the National Library in Paris. It was written about two thousand years before Moses, which would be thirty-five hundred years before Christ. From the precepts contained in this old work we learn that the Egyptians of that remote time had much the same conception of the qualities which make up the gentleman as we have at this day, and which the Greeks and Romans had. The words might have been written to-day, and this old writer teaches a lesson of wisdom which I wish to impress upon you to-day. It is a love of learning and zeal to acquire it, and with this love and zeal a combination of modesty and tolerance. He says: "Be not arrogant of that which thou knowest, for the barriers of art are not closed; no artist has attained that perfection to which he should aspire." With all the knowledge that has been accumulated in your profession, there remains so much to be learned of that which men wish to know that we are but beginners. You remember that the greatest of mathematicians, Sir Isaac Newton, said that when he considered the illimitable space which man seeks to explore, and the little that is known, he felt as a child gathering pebbles on the ocean's shore. But this is only inspiration for the ambitious student, the man of science. He has the untried field in so many things before him that promise the reward of discovery to the diligent and intelligent worker that he goes into the work with the assurance that his toil will not be in vain.

You have entered upon your life-work, gentlemen, and we send you from the halls of the University to do your part in the practice of medicine. We have fitted you to join the ranks of a profession that will exercise your highest talents, and which will gratefully give you its choicest and rarest rewards if you deserve them. I do not say that a man can certainly command success in life. I am mindful of the words of the Preacher, that "bread is not to the wise, nor yet riches to men of understanding, nor yet favor to men of skill; but time and chance happeneth to them all." But I do say that in a large measure a man's life is what he makes it. We have our limitations, but within them a man is the architect of his own fortunes. The great places in your profession are to be filled as they fall vacant by the passing away of the older men. All the honors are to be taken by the young men. There is just as much before you as there was before the learned men who were not many years ago standing on the threshold, just as you are. You must have persistent industry, ambition, temperance, courage, fortitude, and you will succeed in realizing your hopes. You have, by four years of work in which you have shown these qualities, won the first reward. The University looks to each of you to win distinction which will reflect its brilliance upon her, and extends to you her earnest wishes for your prosperity.

LIST OF GRADUATES, MARCH 28, 1902.

Anderson, Richard Taylor, Kentucky.	Meade, Charles H. B., New York.
Bronner, Herbert, A. B., B. S., Kentucky.	McDonald, James E., B. S., W. Virginia.
Blocher, Jesse Bright, jr., Indiana.	McCulloch, James H., Ph. B., Arkansas.
Chipps, James Edward, Kentucky.	Nordlander, A. G. E., A. B., Ph. D., Texas.
Crawford, David Plesent, B. S., Illinois.	Norton, Francis, A. B., Kentucky.
Curlin, Prather B., B. S., Kentucky.	Ogden, Floyd Parks, Kentucky.
Cook, Henry C., Kentucky.	Overton, Marvin C., Kentucky.
Gardner, William E., A. B., Kentucky.	Pirtle, Robert Tilford, Kentucky.
Greene, John Morton, New York.	Polloch, Mahlon Estill, Kentucky.
Hogg, William Price, Kentucky.	Richards, William Renn, Indiana.
Hogsett, Samuel William, West Virginia.	Snyder, Earl A., B. S., Indiana.
Hindman, Robert Y., B. S., Kentucky.	Shawler, Everett F., Kentucky.
Hagey, John Briggs, New York.	Thieman, John H., jr., Ph. G., Kentucky.
Mason, Lucy Dudley, Kentucky.	Teaford, Benjamin J., Indiana.
Marden, Martin Gould, Pennsylvania.	Turner, T. J., M. S., D. V. S., Kentucky.
Macmillan, C. Edward, A. B., Ohio.	

THE following is a letter from the Committee of Arrangements, who have charge of the matter of entertaining the State Medical Society at Paducah:

The Committee of Arrangements for the next meeting of the Kentucky State Medical Society, which meets in Paducah May 7th, 8th, and 9th, desires very much to have you present, and also asks you to speak to your fellow-practitioners about this meeting.

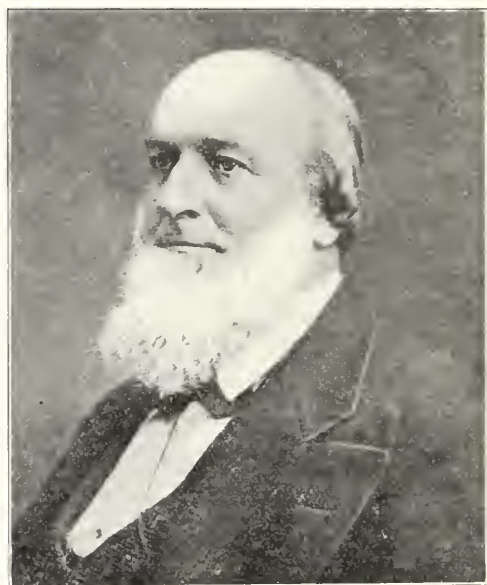
The Committee on Entertainment for the Southwestern Kentucky Medical Society, who will entertain the State Society, are making elaborate arrangements for your entertainment while here, and we can assure you that you will enjoy true Kentucky hospitality every day and hour while with us. Every member of the profession here is enthusiastic, and will make it a point to see that our guests lack for nothing that it is in our power to extend.

We especially desire to call your attention to the one and one-third fare round-trip rate secured on all railroads in Kentucky. In purchasing your ticket, ask the agent of the railroad company to give you a certificate of having purchased one first-class fare to Paducah, and the Secretary here will see that you get a return fare at one third the regular rate.

SMALLPOX IN INDIANA.

The prevalence of smallpox in our neighboring State, Indiana, has become alarming to a degree that makes it a very serious matter. It does seem that there ought to be a law of compulsory vaccination. In all the whole history of medicine there is nothing more thoroughly settled than the fact that vaccination prevents smallpox, and yet every now and then, and much to the discredit of the doctor who doubts its efficacy, we find a practitioner who refuses to believe in its efficiency. Again, many doctors say they do not believe that the present disease as it now prevails is genuine smallpox. Let that be as it may, it kills every now and then, and because the epidemic which is now prevailing is not so fatal as those that have preceded it is no ground whatever for doubting the true nature of the disease. We regret very much to note the fact that the present condition of affairs concerning smallpox is due to the uncalled-for action of many members of the profession throughout the country. Our advice is to view the matter from the serious standpoint which it demands; if you do not, necessity will force you to do so, hence the sooner you recognize the fact as seen by the majority of the profession the better it will be for you. The infected districts are sure to be quarantined, and when that is done then you will recognize the importance of eradicating this horrible disease.

DR. H. M. SKILLMAN, of Lexington, Kentucky, died in the latter part of March in his native city, while ministering to a patient. He graduated from Transylvania University in 1847, and has been constantly engaged in practice since that time. He was the last member of the faculty of his alma mater. He was Professor of Pathology and Demonstrator of Anatomy in that institution. His was a busy life, and



his career an honorable one in every particular. The profession of the State idolized him as one of its models, and elected him President of the State Society many years ago. He was loved by his brothers in the profession as a father, and the news of his death brought sadness to many hearts.

THE SALE OF FOOD AND DRUGS ACT AT BRISTOL.—During 1901 there were submitted to the analyst of the city of Bristol 732 samples of food, etc., a proportion of one sample to 449 persons in the city. Of the 259 samples of milk taken eighteen were condemned, and eighteen of the 377 samples of butter examined were found to be impure. Convictions ensued in all these instances except one, where a warranty was produced. There was no adulteration found in any articles examined except milk and butter. For the Departmental Committee on Food Preservatives sixty-one samples of food were taken in Bristol, and twenty-six, or 42.6 per cent, were found to contain preservatives.—*London Lancet.*

Current Surgical and Medical Selections.

ASPHYXIA IN NIGHTMEN.—M. Hanriot has recently been giving the Society of Biology some information upon this subject. It is well known that nightmen who have to go down into cesspools are exposed to the danger of intoxication by the gases which collect in these receptacles. Chevreuil considered that the toxic agent was sulphuretted hydrogen, but from experiments made by various observers it appears that this gas is only toxic when the proportion existing in the respired atmosphere is at least 5 per cent. M. Hanriot has analyzed the air in unventilated cesspools, and has found that sulphuretted hydrogen exists only in the proportion of three parts per 10,000. On the other hand, the proportion of carbonic acid was 10 per cent, of oxygen 0 to 3 per cent, of nitrogen 45 per cent, of marsh gas 28 per cent, and of free hydrogen 9 per cent. The asphyxia to which nightmen are liable can not therefore be due to sulphuretted hydrogen. M. Brouardel and M. Loye, who conducted as experts an inquiry into the deaths of nightmen who had perished from asphyxia, were surprised not to find at the post-mortem examination any of the usual appearances of poisoning by sulphuretted hydrogen. It appears, then, that death is due to want of oxygen, to the high proportion of carbonic acid, and possibly to the action of toxic volatile bases. It is possible for the contents of cesspools to give off sulphuretted hydrogen, and if fecal matter is treated with acids it gives off a large quantity of sulphuretted hydrogen and of carbonic acid. But as a rule the contents of a cesspool are alkaline, and contain some 2 or 3 per cent of ammonia. Chemical disinfection is of no use; the only means of preventing such accidents is by the use of thorough ventilation.—*London Lancet*.

LACTATE OF MERCURY IN PHARMACY.—At the meeting of the Hospitals Medical Society held on February 28th M. Gaucher said that he had long been on the look-out for a mercurial preparation which should unite the four following advantages: (1) that of being an organic body; (2) easy to prepare and of definite composition; (3) of being unirritating, and so capable of administration either by the mouth or by hypodermic injection; and (4) of containing such a proportion of mercury that a dose of one centigram per diem should be enough. M. Gaucher, together with M. Lextrait, the pharmacist at the St. Antoine Hospital, and M. Caudillon, the interne in pharmacy at the same hospital, think that they have found a substance possessed of these desiderata in the neutral lactate of mercury. This salt contains less mercury than the perchloride does but more than the benzoate. It is easily prepared by dissolving red oxide of mercury in a 10 per cent solution of lactic acid. The acid must be pure. The dose is four coffee-spoonfuls (from 40 to 50 minims) per diem, of a 1 in 1000 solution if given in water or milk by the mouth, or one centigram of a 1 per cent solution given by the hypodermic method.—*Ibid*.

GONORRHEA AND MARRIAGE.—Zeissl (*Wiener med. Presse ; der Frauenarzt*, September 20, 1901) replies to the question, "When may a man with gonorrhea marry?" that this is allowable only when repeated clinical and bacteriological examinations give an absolutely negative result. The absence of gonococci in the secretions is not sufficient, but the patient must still be kept under observation until he is beyond suspicion. The presence of opalescent threads in the urine show that the discharge has probably ceased to be infectious. This opinion is strengthened if only a few round epithelial cells are seen under the microscope. If diplococci are found, even though these do not grow in cultures, the innocent character of the secretion can not yet be inferred. If no additional information can be obtained by the use of the endoscope, the writer recommends that the patient should use an irritating injection of nitrate of silver and drink beer frequently. If a free discharge from the urethra appears, and at once ceases spontaneously and no gonococci reappear, the patient may be regarded as cured.—*The American Journal Medical Sciences*.

THE RESULTS OF PARTIAL GASTRECTOMY.—In March, 1899, Mr. J. Rutherford Morison, of Newcastle-on-Tyne, showed at the Clinical Society of London five persons on whom he had performed partial gastrectomy for malignant disease of the stomach. In commenting on these cases we expressed the hope that Mr. Morison would later let the surgical world know the after-results, for obviously in several of them the interval after the operation was far too short to justify an opinion as to absence of liability to recurrence. We are indebted to Mr. Morison for furnishing us with further particulars of these cases. In the first case pylorotomy was performed in 1897, and for nearly three years the patient was perfectly well, but signs of recurrence then appeared; a great part of the lesser curvature of the stomach was involved, and she died three years and two months after the operation. The second patient continued well for eighteen months, but then he began to lose weight, and he died two years and two months after the operation. At the necropsy the neighboring lymphatic glands and the liver were found extensively affected by the growth. The third patient first had signs of recurrence eight months after the operation; a large swelling appeared in the epigastrium, and she died fifteen months after the pylorotomy. In the fourth case the patient had perfect health for nearly two years, but then he had a febrile attack, and as he recovered from that signs of recurrence of the growth appeared, and he died eleven months later with a large mass in the epigastrium, and an enlarged liver. In the fifth case gastric symptoms appeared about two months after the operation, and death occurred about six months after the pylorotomy. On a superficial consideration of these cases it might at first be thought that they were unsuccessful, for in every one of the five recurrence occurred either locally or in the liver. This is certainly true, but it must also be borne in mind that in all the cases there was a period of

absence of symptoms more or less lengthy, but extending in one case beyond two years. During this period the patients gained greatly in weight and were able to digest ordinary food. The lessons to be learned from these cases are: 1. That malignant disease of the stomach is frequently more extensive than appears to the naked eye, for in most of the cases local recurrence took place. Therefore, a very wide removal of the growth is indicated, and the experience of the last few years shows that large portions or the whole of the stomach may be removed without any serious disturbance of the digestive functions. 2. Since recurrence in the second case occurred in the lymphatic glands and in the liver, though the stomach itself remained free, it is obvious that these must have been affected before the operation. The only method of obviating such a result is to operate early, and for the opportunity to do so the surgeon must be indebted to the physician, who invariably sees these cases first. If an evident swelling in the epigastrium is awaited before a diagnosis of malignant disease of the pylorus is made a very large proportion of the cases will be too far advanced for complete removal of the growth, for the lymphatic glands and the liver will be already affected. So far as the surgery of Mr. Morison's cases goes nothing could have been better; from the operation itself recovery in all cases was speedy and complete, but the operations were undertaken at too late a date for the complete removal of the disease.—*London Lancet*.

COCAINIZATION OF THE SPINAL CORD.—This method of inducing analgesia during operations continues to find favor among French surgeons. M. Guinard, who was for long prejudiced against it, has now become convinced of its excellence. He has modified the technique so as to avoid the occasional undesirable accompaniments, namely, the intolerable headache, the pyrexia, and the syncopal attacks. Influenced by the researches of Ravout and Aubourg, he has given up water as the vehicle for the solution of cocaine and employs the cerebro-spinal fluid of the patient who is the subject of the operation. He recommends the following procedure: The patient is seated with the legs dependent and the head inclined forwards. The skin is disinfected in the lumbar region. A point is selected in the middle line a finger's breadth below a horizontal line joining the iliac crests and the skin is anesthetized by chloride of ethyl. The left index is placed on the spinous process immediately above, and the needle, eight centimeters in length, is pushed in gently from below upward. At a depth of four or five centimeters there is no longer any feeling of resistance, and on withdrawing the silver wire from the needle sixty to eighty drops of cerebro-spinal fluid are allowed to flow into the sterilized receptacle. Six or seven drops of a concentrated solution of cocaine (one centigram to two drops of water) are mixed with the cerebro-spinal fluid, the mixture is drawn up into a syringe, and injected slowly through the needle. M. Guinard has carried out this method in more than fifty cases without an unpleasant symptom.—*Rev. de chir.*, Paris, November 1901.

Special Notices.

WE call the attention of our readers to the advertisement of the Robinson-Pettet Co., Louisville, Ky., which will be found on another page of this issue. This house was established fifty years ago, and enjoys a widespread reputation as manufacturers of high character. We do not hesitate to endorse their preparations as being all they claim for them.

A LESSON FROM THE MASTERS.—The study of the practice and teachings of the really great men in medicine is a fruitful source of knowledge and practical guidance in the management of disease. Two principles are clearly recognizable; first, that nature possesses the ability to successfully combat the acute infectious diseases without the necessity of resort to powerful drugs for the relief of symptoms; second, that treatment is most successful which is most simple, and which has for its object the reinforcement of nature's methods of antagonizing the encroachment of the disease processes. The application of these principles constitutes the most successful method of treating influenza, pneumonia, bronchitis, and the numerous winter diseases associated with inflammation of the respiratory organs.

One method of treating these conditions is by administering a powerful, and in truth a depressing drug, for practically every symptom, *e. g.*, opium in some form to control cough, a cardiac and metabolic depressant to reduce fever, stomach-disturbing remedies as expectorants, etc. This plan of treatment is, authorities assert, antiquated, irrational, and ineffective. On the contrary, it is a matter of absolute fact, proven by experience, that if a patient with pneumonia, influenza, severe bronchitis, is properly nursed, given adequate, easily assimilated nourishment and be given Gray's Glyc. Tonic Comp. in dessert to tablespoonful doses every three or four hours, that patient will withstand the attack much better and be surprisingly free from the pronounced depression which accompanies and succeeds these diseases. This plan of treatment has also the great advantage that the patient is spared the baneful effects of excessive drugging.

Gray's Tonic not only fortifies the patient's strength, aids digestion and assimilation, but has an unquestionable influence in palliating the symptoms of respiratory inflammation.

THE PURDUE FREDERICK CO.

15 Murray Street, N. Y.

THE BRYAN RATIO OF 16 TO 1.—S. F. Wehr, M. D., of Belleville, Ill., late surgeon U. S. A., writing, says: "For upwards of ten years I have been using and prescribing Sanmetto for almost all kinds of genito-urinary troubles. I have never found anything its equal. In chronic cases of gleet it can not be excelled. In all kidney troubles its action is fine, relieving the backaches, etc. I could not get along without keeping it upon my dispensing shelf. Hundreds of empty bottles are in my cellar I would exchange for filled ones at the Bryan ratio of 16 to 1. So much for Sanmetto."

THE AMERICAN PRACTITIONER AND NEWS.

"NEC TENUI PENNĀ."

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NO 10.

Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

CHILD LABOR.*

BY PHILIP F. BARBOUR, A. M., M. D.

Professor of Diseases of Children, Hospital College of Medicine.

The wonderful growth of cotton manufacturing in the South has created new economic conditions, which offer new problems for our consideration. The machinery of cotton manufacturing has been perfected so as to be almost automatic, so that the labor required for its direction need not be skilled; in fact, in weaving the cheaper grades of cloth the laborer is required to watch only the threads, and when they are broken tie them securely and start the machine again. As the work does not require skilled labor and is not heavy, it was inevitable that women and children would soon be drawn into it, and such has proven to be the case. Such labor is cheap, so that there has been every inducement for the manufacturers to employ, as largely as possible, women and children.

The greed of human nature is such that wherever possible more and more work is thrown upon even the children, and unless one's attention is called to it forcibly the extent to which children are employed and the grave sociologic, economic, and physical dangers involved will not be appreciated, and great harm will be done to the children—to the future men and women of the South—for it is in the South only, of all the civilized portions of the globe, that the slavery of children is still permitted, and where efforts in behalf of the innocent and unprotected have been most actively antagonized.

*Read before the Louisville Clinical Society, March 25, 1902. For discussion see page 390.

One or two facts may be unknown to you. First, that the hours of work for children under twelve years of age in cotton mills are often as long as eleven and one-half hours per diem, and in rush seasons they may be put on an all-night shift, and for such labor the daily wages may be from 10 to 15 cents. Secondly, that the number of children under fourteen years of age so employed is over sixteen thousand by conservative estimate, and is rapidly increasing.

The effect of factory labor upon children began to attract attention in England early in the last century, and the outcome of the observations was that England and Continental Europe, and the Northern States of this country, have passed very stringent laws governing the employment of children in factories, and public sentiment backs up the enforcement of these laws. But in the Southern States no adequate provision has as yet been made for the protection of this helpless class. It would seem that humanitarianism should be paramount to commercialism, but it is not so.

The chief claim of the large factories is that child labor is almost necessary to their existence, in order to make a profit out of the investment, and some of the cotton mills of Alabama, in the recent fight made on child labor before the Alabama Legislature, virtually threatened to move out of the State unless they could be allowed still to employ children at such nominal wages as above stated, although the dividends upon such property is said to average 25 per cent, and in some cases to reach 100 per cent. Some families are almost supported by the children, and the employment of the father is conditioned upon his having one or more children who can be worked in the mill for from ten to eleven and one-half hours per day. It is very easy to foretell that the labor of the children will be brought into competition with that of the father, and the result will be a reduction in the earning power of that father. This economic fact seems not to be appreciated by the workingman.

A potent objection to the employment of children is that they are prevented from obtaining that free education which is almost a birth-right in Northern States. This absence of educational advantages will result in the child's growing up ignorant and untrained, and eventually trained, experienced, and high-priced workmen will have to be imported for any factories which may spring up and need trained artisans. The negro in the South is grasping every opportunity for education. The white man of the working classes is sucking the life-blood out of his

children by working them in mills and by denying them education. It does not require a prophet to foresee a future which will be a curse to the white population of the South.

It is not my intention to dwell upon these facts, important as they are, but to allude briefly to those phases of child labor with which we as physicians are more closely concerned.

The moral character of factory girls is not necessarily bad, yet all who have seen anything of factory life, even among older and more mature girls, will recognize its debasing influence. How much greater the danger in young girls and boys of ten to twelve years of age, who must develop to puberty in such an environment! Combine ignorance and lack of education and home influences with youth, and the wonder is that more gross immorality does not exist under such unfavorable conditions.

It is the boast of many factories that they have done much for their employes, libraries, schools, natatoria, etc., having been erected for them, but these things will be found wanting when weighed against the loss to the children from the hard physical conditions under which they labor. To quote from an able article on child labor in Alabama by Mrs. Irene McFadyen:

"Dr. Torrop is the chief authority in Lancashire, England, on the subject of child labor, having had thirty years' experience as a medical man in the textile district. He says that often a promising child, who is allowed to work even a few hours a day, degenerates before he is thirteen. He noticed a certain amelioration in health when the half-time age was raised from ten to eleven, for with every year the child gains a little more of resistance to unhealthy conditions.

"The whole population, he says, has been stunted by too early toil, and the enfeebled condition of the operatives has become a source of danger to England's future. The normal stock of the Lancashire folk is among the strongest and finest of English peasantry, but four generations in the mills from early childhood has entirely changed and depreciated the type. They look a different race of beings—cramped life and stunted growth show themselves whichever way you turn. Practically the whole operative class bear traces of the blighting effects of their premature toil.

"An investigation was made in the schools during 1899 into the health, height, and weight of eighteen hundred half-timers, who had been in the mills a year or more, as compared with that of two thou-

sand full-day scholars. Only fifteen of the half-timers looked healthy, and they were the children of parents from the rural districts. No one could fail to pick out the mill children at a cursory glance. The result showed a deficiency of twelve pounds in weight below the average child of working parents, and twenty-two pounds below the child of the wealthy classes. The difference in growth and height were five and seven inches respectively."

Who can estimate the mental, moral, and spiritual loss to the child indicated by those figures? Much study has been given in the last few years to the subject of the effects of fatigue upon the child. The deleterious results of overwork, mental or physical, have been noted in various ways in the growing child—studies which show the loss of mental concentration from being in school a few hours each day, with its diversified interests.

More apparent are the effects of fatigue upon the physical well-being of the child. No one doubts that the daily contest between the ever-present germ and the body cells depends for its result upon the relative strength of the opposing forces. It has not yet been determined what physio-chemical change takes place in a bronchiole or air-cell that allows the tubercle bacillus to find its lodging-place there and to develop tuberculosis. The secret of immunity is as yet well guarded by nature. We do know empirically, however, that fatigue lessens very markedly the power to resist infections, and a closely-maintained attention is just as potent a factor in producing fatigue as is physical work.

Another factor which is to be noted is the atmosphere that is found in all manufactories, especially those of cotton or woolen goods and tobacco. The constant breathing of factory dust is a cause of tuberculosis in an alarming number of cases. Those who have had much clinical experience in this city will have been struck with the frequency of tuberculosis among such operatives. Now, put children at continuous labor in such an atmosphere, and the high mortality is easily explained.

To quote again from Mrs. McFadyen's article, "Dr. Barwise, medical officer for Blackburn, England, showed that 29.9 per cent of deaths among cotton operatives occurred between the ages of ten and twenty-five, while among the common laborers the percentage is only 6.8."

Yet the little children laboring through the long hours of their working day, under the forced strain of constant, close attention, in

the nerve-racking whirr of machinery, and breathing a dirt and dust-laden atmosphere, make no appeal to the mill-owners, and what is worse have no defense against this condition in their parents. When we see this greed of human nature we are almost forced from a careful scientific examination of facts into rabid partisanship of this helpless class.

The subject is too large to be dealt with in a brief paper. I have hoped only to enlist your sympathy and interest in a crying evil that is rapidly increasing. For, while the physician can not often accomplish large reforms in existing conditions, his personal work with his clientele can influence private opinion and so aid in the enforcement of laws for the protection of child labor.

"Try to conceive," says the investigator above quoted, "how much joy and gladness and health and childish delight and hope have been lost in those twenty-two pounds avoirdupois and five or six inches. Then you will begin to get the measure of our continued offense against our little ones in these closing months of the nineteenth century."

LOUISVILLE.

LABORATORY WORK IN GENERAL PRACTICE.*

BY SAMUEL E. WOODY, M. D.

The young doctor wants to win prestige, the older one wants to keep it. Then they must do better work than their competitors—actual, honest work, and not mere theorizing. A generation ago—yes, only thirty-five years ago—when I was a student in the Louisville Medical College, medicine was more speculative and metaphysical than now. The brilliant practitioner was an impressive man—usually a "well-read," scholarly man, deeply versed in the history and logic of his profession, especially the logic, for they were great arguers—giants in debate. Yes, "there were giants in those days." There were Gaillard and Bell, Vandell and Reynolds, Rogers and Foree, and that great pair, the indefatigable Holloway and the inimitable Kelly, who, each through his "long years of continuous medical teaching," have brought to us with phenomenal freshness the consecrated learning and brilliant wit of the golden age to illumine the prosy work of to-day, while they themselves, sportive as colts, still hold the front rank.

* Read before the Alumni Society of the Louisville Medical College, March 25, 1902.

In the old days the doctor was something of a philosopher—metaphysician as well as physician. He sat at the bedside and by skillful questioning gathered the subjective symptoms, and after digesting them in his mind came to what seemed the most logical conclusion as to what ought to be the matter with his patient. The practitioner of to-day is not satisfied with knowing what ought to be the matter; he looks into the various products, processes, and tissues of the ailing organism to find out what actually is the matter. Medicine, if now less an art of weighing probabilities, is more an art of ascertaining facts, the only proper basis for safe and effective treatment.

Many of the most essential and frequently needed clinical facts can be determined only by laboratory work. The city practitioner has recourse to laboratories where specialists are doing splendid work, and the mails and express bring these laboratories in reach of the remotest country doctor, but the trouble, delay, and expense are such that the practitioner seldom avails himself of their aid. Some investigations are practicable only in the laboratory of the expert, but at least nine-tenths of the general practitioner's laboratory work can be done by himself at his office, provided he will incur a moderate expense for apparatus and will learn, or has learned, what every young man now must learn before he can graduate from a respectable and efficient medical college. Unfortunately, there is the difficulty; so many of us are without that knowledge.

Laboratory work was not taught when we older alumni were in college; in fact, much of it was then unknown. When I was a medical student no college in this city had a microscope, and of course not a laboratory, unless we should dignify with that name the den where the professor of chemistry prepared his pyrotechnics to "amaze the rustics ranged around." Since then clinical diagnosis has made such vast and revolutionary strides toward refined methods and accurate work that the college has provided numerous and well-equipped laboratories, and not a few of us (though still too few) have come back and taken post-graduate courses in the new work; others, who could not leave home, have gone to school in their offices, with the new books for teachers. We have had it to do or take rank among the back numbers, a thing no live doctor can consent to do. Every doctor who aspires to do prompt, intelligent, and effective clinical work these days should have some sort of private laboratory. It should, if possible, be a separate room, where he can keep his appliances and specimens

undisturbed, and when interrupted come back and take up his work where he left off. It is a mistake to say he has not the time to work in it. If the average doctor would utilize in this way the odd bits (or chunks) of time he habitually wastes in discussing farming, politics, religion, sports, or other small talk, or in the sober but senseless whit-tling of goods-boxes, he could do such an amount of laboratory work as would make him invincible in diagnosis, an ornament to his profession, and a blessing to his people. If he is really honestly so busy that he can not spare the time, he can well afford to employ an assistant from among the many capable and trained young men that are coming out every year. He owes that much, at least, to his large and appreciative clientele.

The laboratory furniture may be cheap and simple, and yet very effective: A table and stool at a window; a wall-case for reagents and specimens; a physician's scales; a large and small graduate and a volume pipette; bits of glass tubing and rubber tubing, and two inches of platinum wire; several evaporating dishes and watch-glasses; small glass funnel, with filter-paper to fit; retort stand for holding burette, etc.

It is incredible what valuable and varied work the physician can do with these simple and inexpensive appliances if he takes the time and knows how. It all depends on "the man behind the gun." With this little outfit he is equipped for almost all qualitative work in clinical chemistry, and for much that is quantitative.

The burette is a simple, inexpensive instrument, and should be more generally used. It is only a glass tube, graduated, and with a stopcock at its lower end, yet it is about all that one needs in the whole realm of volumetric analysis, a field much simpler and easier than it sounds—a method of great accuracy, and one that takes little or no time, especially if you have the druggist make up the test-solutions beforehand. It is about all there is to stomach analysis after you have pumped the test-breakfast from the patient's stomach. Of course every physician is expected to have a microscope, so I have not included it in the foregoing list of laboratory furnishings.

As a convenience and time-saver in the physician's laboratory there is nothing comparable to the centrifuge, especially in urinary and blood examinations. By utilizing a centrifugal force several thousand times as great as gravity, one can effect a better sedimentation in three minutes than in three days without it. Thus the doctor gets to finish

the needed examination while the patient sits in the office, and before prescribing, or at least before the specimens have time to decompose or undergo other changes disagreeable and confusing. Only those who have had actual experience can realize how hard it is to follow a cold trail, and how apt the busy doctor is to postpone and neglect these examinations. With the centrifuge he not only makes the examinations more quickly and promptly, but the work is better done, especially for the organized sediments that subside slowly and incompletely, or are sparsely scattered through the specimen, for the centrifugal force concentrates everything in the pointed distal end of the tube.

Daland, who developed the centrifuge into its present form and efficiency, has made a series of experiments with solutions of known composition, and has formulated quick methods for the quantitative estimation of various urinary constituents. In every case he fills the tube up to the ten cubic centimeter mark with the urine and then adds the appropriate test solution up to the fifteen cubic centimeter mark. After rotating for three minutes at sixty turns of the handle a minute, the depth of the precipitate is noted on the graduated scale and compared with what has been ascertained to be normal.

I have found the centrifuge very convenient and effective in the analysis of milk, especially in the estimation of fat in mother's milk. In blood examinations the centrifuge is next in importance to the microscope. With the centrifuge we can, in less than five minutes, get a count of the red and white corpuscles, and a fairly accurate estimate of the hemoglobin. Hematology has made such rapid strides in the last few years, and its indications are so essential to the diagnosis and prognosis of so many diseases, that the up-to-date, conscientious physician must occasionally examine the blood of his patients. Formerly we spoke of "anemia," but now we differentiate between various anemias—diseases of vastly different pathology, prognosis, and treatment—a differentiation impossible without an examination of the blood. Last summer I was consulted in a case where at the time the symptoms in the aggregate compelled a diagnosis of typhoid fever, and that diagnosis might have remained undisputed and indisputable had not a blood examination showed an absence of the Widal reaction and a marked hyperleukocytosis, indicating, of course, an extensive suppurative process.

Every physician with a microscope and an immersion lens ought to be able to recognize the plasmodium malariae, for by its detection

the diagnosis of the most obscure cases of malarial infection becomes easy and indisputable. A year or two ago I exhibited before our Surgical Society an infant with a tremendous tumor in the left side of the abdomen. My diagnosis was unanimously assailed, though there was no unanimity in the contrary opinions. One of the most skillful and learned of our colleagues reported the case (Pediatrics, 1900) as one of dislocated liver. But relying most of all on the blood examination made when it was first brought to my clinic, I continued the arsenic and quinine until the tumor finally shrank up into the left hypochondrium, where a well-behaved spleen ought to stay.

In concluding this hurried glance at laboratory clinical diagnosis by the general practitioner, allow me to disclaim any intent or tendency to depreciate or underestimate the value of subjective symptoms and other data obtainable outside the laboratory. The wise, well-balanced physician "proves all things and holds fast to that which is good." To all the rest he adds the exact data afforded by the laboratory, and becomes the rational, scientific, and safe doctor of to-day, the crowning glory and most beneficent product of our unparalleled civilization.

LOUISVILLE.

GONORRHEAL RHEUMATISM.

BY J. DOUGLAS WESTERVELT, M. D.

The etiology of this disease has for many years given rise to much discussion, without adding any reliable information to the subject under investigation.

The disease is recognized by many able writers as a toxemic effect of the gonococcus upon the general system, either by its presence in the circulation or that of the toxins of this micro-organism. They maintain that the specific urethritis is the local manifestation of the micro-organism, and the accompanying arthritis is a localized product of a general infection. They go so far as to claim that the synovitis is in no way related to rheumatism, and even discard the name under which the disease is generally known, calling it gonorrheal arthritis instead of gonorrheal rheumatism. The reasons set forth for such views are that the articular inflammation occurring with gonorrheal urethritis is different from the ordinary rheumatism.

These writers seem to ignore what is universally conceded, that the clinical features of a mixed disease are entirely different from the typical features of the diseases forming the complication. The fact that an articular inflammation associated with gonorrhea is dissimilar to an ordinary synovitis furnishes no grounds for believing that these conditions have no interrelation. It is claimed by these authorities that gonorrheal urethritis causes the articular disease, and yet they can not explain its mode of action in producing the two forms of inflammation. If the pyemic theory is accepted, why are the joints alone involved? Why are not other tissues invaded? Why is the arthritis sometimes monoarticular and sometimes polyarticular? Why should the large joints be more liable to invasion than the small joints, and why is the knee-joint so much more frequently involved than the others? A general pyemic infection should not be so restricted in its operations.

It is claimed in behalf of the pyemic theory that gonorrheal arthritis does not require for its production the usual exciting causes which invite rheumatic attacks, but can any one name any special exciting causes which invariably give rise to an attack of rheumatism? Gonorrheal rheumatism occurs most frequently in the early part of middle life; so does rheumatism. It occurs more frequently in males than in females; this is also the case with rheumatism. Gonorrheal rheumatism occurs in only about two per cent of gonorrheal cases. If the gonococci or their toxins provoke the articular inflammation, it seems strange that they do so in only one or two cases in a hundred of gonorrheal urethritis. According to the testimony of many trustworthy observers, the same forms of articular inflammation have been known to accompany urethritis not produced by the gonococcus. This weakens the theory of pyemic infection and strengthens the contention by many writers of concurrent rheumatic disease as a dominating factor.

Furthermore, it is very rare to find pyemia or septicemia resulting from inflammation of the mucous membranes, and if it should, other contiguous structures would be likely to suffer as well as the joints.

Is it possible that gonorrheal pyemia will produce gonorrheal rheumatism and at the same time never cause pyemic disease in any neighboring tissues or organs? It is true that the pyemic theory is now more generally accepted than any other, but the clinical evidence upon which it rests will not bear a critical examination. It would

seem, in the absence of any positive evidence to support the theory of pyemia, accidental rheumatism as an intercurrent complication would be a logical inference in the determination of factors in gonorrheal arthritis. There is much more evidence in favor of this theory than that of pyemia, but the tendency of most writers to reason from the standpoint of an unwarrantable bias leads them to ignore every argument which refutes the theory of gonorrheal inflammation. They claim that the gonococcus has been found in these inflammatory lesions, but they overlook the fact that in the majority of cases it has not been found, and furthermore, its presence does not prove it causes the lesion.

The writer does not claim that all cases of arthritis in gonorrheal disease are rheumatic, nor that the gonococcus never exerts any provocative influence over the arthritis inflammation. The main contention of this paper is that the variegated clinical history of rheumatism shows that it is a potent factor in many localized lesions, and there is no justification in a sweeping denial of its relationship to gonorrheal arthritis. The symptoms of gonorrheal rheumatism during the course of gonorrheal urethritis are a sense of uneasiness, aching, stiffness, or lancinating pain in one or several of the joints. The knee is oftener involved than any other articulation, especially the left knee. Other joints may become consecutively or simultaneously involved. The articular inflammation usually develops in the later stages of gonorrhea, and often after the urethral discharge has almost entirely ceased. The articular symptoms arise gradually, without any alteration in the external appearance of the joint. As long as the affected part is at rest there is not apt to be much pain, but the least movement provokes it at once. The inflammatory process is of a sub-acute type, and it never announces its advent with a chill, as generally happens in pyemic attacks. When the inflammatory attack reaches its culminating point the joint may become distended and give rise to considerable effusion. The articular inflammation may run an indefinite course and last weeks or months. In these cases if the effusion is of a fibrinous character ankylosis may result.

In the treatment of this disease we must not lose sight of the fact that we have to deal with a mixed form of disease. We have the gonorrheal element confronting us, and we also probably have a rheumatic element to claim our attention. Besides these conditions we may also be required to treat the general health of the patient. If

there is a urethral discharge it must be checked. If there is a rheumatic condition it must be treated. If there is an impaired state of the health, this also must engage our attention. The local treatment of the articular inflammation will not differ materially from that of any inflammation of the joints. We must allay inflammation, stimulate absorption of effusions, and restore normal functions of the articulation. There are many methods of accomplishing these objects. For the urethritis we may resort to instillations of permanganate of potash, with the internal administration of cod-liver oil and iodide of potassium. The iodide of potassium may be increased or diminished according to the requirements of the particular case. This disease, with its painful accompaniments, has a depressing effect on the vital processes and rapidly impairs nutrition. The iodide of potassium removes the cause of the pains by its eliminating properties and the cod-liver oil improves nutrition, tones up the nervous system, and by regulating the kidneys allays the acidity of the urine. With such a constitutional corrective, suitable diet, and mild antiseptic injections or irrigations this disease is readily subdued. These remedies directly increase the excretion of urine and uric acid and render the urine less irritating to the inflamed mucous membranes of the urethra.

SHREVEPORT, LA.

WHEN TO OPERATE.*

BY A. T. M'CORMACK, M. A., M. D.

Member Warren County Medical Society, Kentucky State Medical Association, American Medical Association, Surgeon-General Kentucky State Guard, etc.

I would hesitate to appear in the role of author before my friends, the fellows of this Society, did I not know that it is well for those of us who are in the active general practice of our profession to frequently review much of our material knowledge that may seem trite in the telling, but which is none the less an essential portion of our medical or surgical armamentarium. Especially in this century, when there is so much of valuable knowledge in the hands of our medical men, so much of glittering promise in the treatment of diseases that to our fathers' generation were *bêtes noir*, is it important for us to examine and know that our foundations as doctors are built on broad and generous plans, so that the dizzy superstructures of pathology and bacteriology and the allied branches of modern medicine may not topple us over and make us one-sided, impractical men. A hundred, yes, ten or twenty years ago, in this fair Kentucky of ours there was many a wilderness which has been long since cleared and is now fertile and productive soil; and while the progress of our State has been wonderful, still many an acre yet remains that must be reclaimed by "generations yet unborn." So, in our medical world, whole quagmires and deserts have been made to "blossom as the rose," and the better-class graduate of the better-class medical college steps forth from alma mater to-day better equipped intellectually a thousand fold than did his predecessor of even twenty or thirty years ago. But the question frequently occurs to me, as it must to many of you, whether we are as much better doctors, whether we treat sick, afflicted, suffering humanity with as much more success as we should do with our vastly increased technical knowledge.

In the medical colleges of 1860 to 1870 there were no special departments of orthopedics, gynecology, internal medicine, nor the special branches of eye, ear, nose, and throat, nor of the rectum, nor of abdominal surgery; there were no chairs nor text-books even of pathology, histology, microscopy, photography, bacteriology, electricity, orotherapy; and yet without any of these branches we had a Sims, a Gross, and a McDowell, a Vandell and a Sayre, and many a thousand nameless heroes besides, who treated sick people's symptoms in a

* Read at the meeting of Muldraugh Hill Medical Society, Elizabethtown, Ky., April 10, 1902.

practical, unsystematic, but sympathetic sort of way that frequently accomplished as much as we are able to do with all of our increased erudition. When one stops to think of the immense scope of the knowledge required of a doctor nowadays it is not to be wondered at that if he acquires it all he should frequently be an utter practical failure. Send one of your chronic invalids, a woman if you choose, to the city, to your friend Dr. A. for consultation and advice. He wisely but unsatisfactorily decides that she is suffering from a complication of affections, but suggests that her urine be examined chemically and bacteriologically by Dr. B., and that a test-breakfast with subsequent lavage be given, and the result, as well as the next action from her bowels, be analyzed by Dr. C., and also that she have the leucocytes, lymphocytes, eosinophiles, red-blood corpuscles, and plaques separated and counted and the comparative quantity of hemoglobin estimated by Dr. D. He then sends her, with these various counts and analyses, to Dr. E., who only does consultation office practice at ten dollars per, and who is a specialist in internal medicine.

After a historical-geneological examination which would put the D. A. R's or Colonial Dames to shame, and after much auscultation and questionings about this and that he delivers himself somewhat as follows: "My good woman, the doctor who sent you to me is a wonderful man, and has described your case perfectly. Your lungs are normal, and your heart is in excellent condition. Your liver is active and your bowels ordinarily regular. The sense of discomfort sometimes felt in your right inguinal region may affect your case materially, but this is not exactly in my line, and you had better see my friend F, who is an abdominal surgeon, and for your rather too frequent headaches first consult G, who should examine you per ophthalmoscope and ophthalmometer and probably refit your glasses, as well as Dr. H, the distinguished neurologist, who is an authority about such matters." Examined by these various authorities, as well as by I, the aurist, J, the dermatologist, K, the laryngologist, she finally comes to Dr. L, the gynecologist, and he discovers a small cyst just to the right of the upper left-hand laceration of the cervix, and he gets his assistant, M, an anesthetist, N, and three trained nurses and an orderly, and punctures the cyst and has its contents examined by O, the pathologist, who decides that its contents are innocuous, and so P, the genito-urinary man, and Q, the rectal specialist, examine her, and after several days she returns to you conscious of a thousand parts of her poor

frame, mixed, muddled, and doubtful as to your knowledge because you never did all the things to her that all these authorities have done. This may seem exaggerated, but much worse frequently happens, and the time is rapidly approaching—in many districts is already here—when we country doctors will be expected to do each of the things that specialists are doing in the cities.

It behooves us, therefore, to thoroughly prepare ourselves and keep abreast of the times along all these lines, and in the preparation not to allow the enthusiasm or technical learning of any one of our teachers nor our own natural bent to sway us from the broadest common sense in the practice of our most practical of all professions.

In no department of medicine is it more important that we general practitioners exercise every lesson taught us by our art, as well as all of our mother-wit, than in discussing and deciding, in any particular case, the question assigned me to-day, "When to operate."

To my mind the general practitioner—if properly qualified—is, or at least should be, the one in the best position to answer this question. In the first place, it is *his* patient. He has known the patient in health. He knows the family and the family history without asking it. In most cases he knows whether the kidneys, liver, lungs, or heart have ever been affected, whether the patient has a neurotic, tubercular, rheumatic, or specific history. He knows to what extent the particular sufferer minimizes or exaggerates pain. And then, too, the general practitioner treats medical cases as well as surgical, and he treats patients who have been operated upon as well as those who are about to be. He does not bother his head much in counting the lymphocytes to decide whether a particular case is typhoid fever or appendicitis, because he understands that when the diagnosis between these diseases can only be made by resort to such fine points that the patient will not only do quite as well without any operation, but will avoid the dangers and sequences of even the most successful operation.

The surgeon, on the other hand, sees operative cases only. He is apt to minimize the consequences of operative interference, to forget that there is considerable discomfort following even the simplest operations, and that patients are never perfectly sound and well after the great operations, unless these be for acute diseases. Modern methods have made surgery so safe that he is apt to operate on many cases which equally good judgment could save from the difficulties and dangers of operation. Besides avoiding these dangerous tendencies, there

are other requirements which people to-day demand of any physician who would do surgery in any of its branches, and it is of special importance that those requirements be met by all who are engaged in the general practice of medicine, and yet who do what surgery comes into their field. The first of these is education and competency. The day is rapidly approaching when the ignoramus who would be a professional man can not gain admittance into our circles. Enlightened modern opinion, lay as well as medical, is demanding from year to year that the entrance to the practice of medicine should be pitched on higher and higher planes, and it is especially important that the surgeon who would be of the vanguard shall have a sound, broad basic education, and that he shall be a competent doctor. I believe most sincerely that no man should be permitted to limit his practice to any special branch of our art unless he shall have qualified himself and have practiced a term of years in the general profession. This is particularly true of the pathologist and surgeon, but is true of all specialties in medicine, because no diseased part of man's body can be treated without regard to all of his organs and their condition. In the second place, the surgeon should be a moral, godly, honest, clean man. Without these qualities he brings the profession he should honor into disrepute, renders his own standing and opinion of less value and of less force, and gives the lie to every good teaching in his own science. "Cleanliness is next to godliness" is true of everybody else, but if the two qualities do not co-exist in the medical man, by just so much as he does not possess them or either of them is he a failure. He should not only *be* clean, but he should *look* clean. He should have clean associates. He should live in a clean house. He should wear clean clothing, and in thought and word and deed should inculcate in every one the urgent necessity for cleanliness.

Next, his armamentarium should be sufficient for any operation he proposes to undertake. That Morris and Price do all general surgery with but a dozen instruments only emphasizes the fact that they are exceptions to the general rule that a good surgeon can do better surgery the larger and better his armamentarium. I never see a surgeon do a brilliant operation with a few disreputable-looking instruments that the thought does not come to me: "What could not such a doctor do if he had enough good instruments, and knew how to use them all!"

Another general consideration is that no operation should ever be done the mutilation resulting from which will render the patient an uncomfortable or helpless invalid for life, nor should the knife be

resorted to in any case which is hopeless. Operative interference in either case only brings surgery in general and the operating surgeon in particular into disrepute. It is a good rule to always ask one's self *prior* to the operation, "What would I want the patient to do were he or she the surgeon and I the sufferer?"

In deciding when to operate in any particular case, we have to consider the patient, his history, his constitution and vitality, the particular disease from which he is suffering, and the general and particular prognosis, and his environment.

No operation should be performed if the patient is suffering from an intercurrent disease necessarily or probably fatal, unless it be some simple, palliative measure. Not even exploratory section nor so-called diagnostic operations are justifiable unless there is a probability that they may result in good to the patient, and elective operations should not be advised in patients with specific histories until the effects of heroic mixed treatment have been tried. A surgeon should never treat a patient having an established drug habit.

Surgical operations may be divided into two classes. (1) Urgent and essential to life, and (2) elective. Among the first may be classed reduction of dislocations and fractures and operative treatment of traumas, fractures of the skull, strangulated hernias, severe appendicitis, ectopic gestations, perforations of the intestine, empyemas, laryngeal and intestinal obstructions, the removal of foreign bodies whose presence endangers life, and most obstetric operations, including immediate repair of lacerations of cervix and perineum. In these cases operation should be done as soon as possible after the patient has been prepared and a competent anesthetist found. It should be explained to the patient, or his family if he be unconscious, that the operation is the safest, easiest, and most certain method of relief, and that it is frequently a *sine qua non*.

Malignant growths form an intermediate class. They should be operated upon, if at all, as soon as possible after a diagnosis has been made, and no operation is more essential to life, but a delay of two to four days is usually made in order to get the patient into the best physical shape possible. He should be thoroughly nourished with easily digestible food, stimulated freely, and the site of the operation most thoroughly disinfected. Recurrent malignant growths should be removed within a few days after discovery. In so far as it is possible to do so, the profession should allay the popular idea that operation in

malignant disease is a *last* resort. It should be the *first* resort, and people should be taught that all malignant growths or tumors that are removed within a month after their first discovery get well and stay well, and that the chances for relief grow less with each day's delay after that time.

Among elective operations may be classed radical cures for hernia, most rectal operations, tubercular disease amenable to surgical treatment, bone, orthopedic and plastic surgery, the removal of benign tumors, and exploratory laparotomies and most gynecological operations. In this class of operations the surgeon is justified in postponing the operation until he can bring his patient into the best possible physical condition.

It is of especial importance that the surgeon be candid and honest prior to deciding upon an operation. He should tell his patient as exactly as possible what is to be done, and to what discomfort or disturbances he will be subject as a result of the disease or injury as modified by the operation. This is especially important in the treatment of fractures and in all other cases in which litigation might ensue.

BOWLING GREEN, KY.

WHY NOT FORESTALL TUBERCULOSIS AND BLOT IT FROM THE FACE OF THE EARTH?*

BY JAMES A. BURROUGHS, M. D.

Modern sanitary laws, enforced by municipalities and nations, have partially throttled certain contagious and infectious diseases and increased longevity sixteen per cent within the last generation.

Vaccination was practiced more than one hundred years ago but smallpox was not rigidly quarantined until later, and now it is to be observed that through vaccination and intelligent quarantine the disease is so robbed of its horrors that it no longer strikes terror to a community.

By rigid quarantine of diphtheria, and the prompt administration of diphtheritic antitoxin, this once dreaded disease has become a subject of vigilance and not of fear.

The investigations of the cause of yellow fever by Walter Reed, of the United States Army, at Havanna during the past two years, have been so thorough and convincing of the one real source of infection

*Read before the Alumni Society of the Louisville Medical College, March 25, 1902.

that never again will the United States, or any other progressive country with a well-organized board of health, experience an epidemic.

Scientific investigation has set the trap and scattered the poison for the rat with a strict quarantine of every suspected case of the plague, and has forever prohibited the disease again establishing a hold in any quarter.

By intelligent quarantine of scarlet fever, whooping cough, and measles, followed by a thorough formalin fumigation, these diseases are limited to circumscribed localities, yes, limited to a single person, in a single room, in a building with many rooms or dormitories, with many persons of a susceptible age.

In the year 1899 approximate mortuary statistics of the United States of America was 1,900,000. Pulmonary tuberculosis was responsible for 246,000 deaths, or approximately 13 per cent of all deaths were due to pulmonary tuberculosis. The mortuary statistics of the United States possibly strikes a fair average with other countries except that of Germany, where in the same year 25 per cent of all deaths in that country were attributed to tuberculosis. Insurance statistics of companies issuing policies against sickness in Germany for the year 1899 show 42 per cent of the laboring class tubercular. These facts or statistics are so stupendous and startling that the average mind fails to grasp the cold, thin, clammy situation of this unfortunate multitude.

We should pause and think ; practically no man is born tubercular every one who has tuberculosis has contracted the disease, and in every instance it could have been forestalled and prevented. For just twenty years we have known the tubercle bacillus, and year by year we have learned its habits and various modes of entering the human system, consuming and extinguishing the life of that which is made in God's own image.

No problem before us at present compares in gravity and magnitude, not only to this generation but to those who come after us, to the wisest disposal of the consumptive. The great question is of two-fold significance. First, how can we best care for the patient? Second, how can we prevent the spread of the disease?

How we can best care for a consumptive. To place him in the most favorable condition for an arrest or cure, and at the same time prevent a spread of infection, allows of much latitude for debate, but at best narrows down to a few cold facts. Education of the laity,

suitable legislation, and the hearty coöperation of each medical man in the land.

Tuberculosis annually causes more deaths than any other two diseases combined. It is an insidious disease, unlike acute infectious troubles, and the public has learned to look upon consumption as something that has always been with us, and accepts the situation as a matter that can not be prevented.

How to educate the masses out of this state of lethargy is a question that should be begun under the head of Hygiene in our public schools. Small children should be taught that tuberculosis is contagious, so as to avoid infection from an afflicted parent, teacher, or schoolmate. These children should be taught that in the sputum lies millions of germs ready to infect any subject with a poor resisting power, caused by heredity, mal-nutrition or any other cause.

Public schools, everywhere, should have a course on public hygiene with special reference to obliterating tuberculosis. This course should include the poor resisting power of children born of tubercular parents, or born of healthy parents with systems that have deteriorated because of environment, lack of proper food, clothing, or habits.

Too much attention can not be given to modern sanitary living-quarters, with adequate room for an abundance of pure fresh air and sunshine; at the same time devitalized air should be taught as one of the potent causes of tuberculosis. There are many things to be included in this little course of hygiene or young war against tuberculosis which has received no attention here, but may be brought out in the discussion. I know of no other way to reach the masses on this or any other subject of such vital importance as starting at the fountain-head with the little ones, who in half a generation will have the custodianship of all nations.

We must all acknowledge that the contagion or infection of any disease must be implanted in the minds of a community before a moral support is given a health board to stamp out a disease. It is when boards of health have good laws to prevent the spread of tuberculosis, and these boards of health are "scotched" by the medical profession, upheld by a people who have been taught the nature of tuberculosis, with its various modes of infection, etc., and the means by which it can be controlled, that we expect to see the disease practically abolished from mortuary certificates.

The public mind of America, as well as that of Europe, is becoming aroused as to the ravages of tuberculosis, and at the same time as to

its prevention and curability. Much unwise legislation has been proposed from erratic, impulsive sources, for instance the "Immigrant Exclusion Act of the Tubercular." Some States have introduced bills to prevent the introduction of the tubercular; even a few villages have passed ordinances prohibiting the tubercular from entering their gates. Such legislation is worthless, because it is impracticable and will ever remain dead upon the statute books. Notwithstanding some mistakes have been made along this line, much good has already been accomplished. The civilized world is enlightened as to the great danger that lurks in the consumptive's sputum. Various pocket flasks and hand cuspidors have been devised for receptacles of sputum; minute details are given each individual as to collecting and destroying same by all intelligent physicians.

Four fifths of the cities of the United States have passed ordinances prohibiting spitting on the sidewalks, floors of street cars, and public buildings. Asheville, North Carolina, in 1894, was the first town in the United States to pass such an ordinance. Dr. Trudeau, at Saranac Lake, very shortly followed suit, and it soon became contagious. Many hundred copies of our ordinance have been sent to city attorneys throughout the country, by request. The ordinance has been well observed here. No man can visit our principal cities to-day and compare hotel lobbies, street-car floors, and sidewalks with their condition six or eight years ago without being impressed with a change for the better. Municipalities are discussing, on every hand, the disposition of their consumptive poor; in many instances homes have been established exclusively for the tubercular. Massachusetts and New York have already made contributions and established State institutions for consumptives; other States are formulating plans along this same line. It is entirely logical and but reasonable to expect every city and State in the Union to adopt some practical means for the care of the consumptive pauper, and to prevent him from infecting others.

The sanatoria idea has taken possession of Italy, Germany, and I may say all of Europe. As yet, the sanatoria capacity is so out of proportion to the number of consumptives in those countries that it offers but slight protection; besides, it has yet to be proven by any kind of statistics that this is best for the inmates. At best this plan can only offer protection in ratio to the sanatoria capacity.

The tenement-house question has been well discussed by Knopf and others, and in a few instances has brought about some legislation

as to capacity and ventilation of apartments. Many cities have taken up the milk and meat supply with the view of eliminating tubercular food products. Many States and nations have laws providing for the disposal of tubercular stock. Many other legislative steps have already been taken against this, the great foe of the human race.

An International Congress of Tuberculosis has been formed, and it is from this international body that the world may expect, in a reasonable time, some formulated plans whereby this disease may be controlled. An international prophylaxis of tuberculosis is eminently necessary, and suitable international regulations, or laws, must and will be enacted to combat this disease, as has been done with cholera, the plague, and yellow fever.

In the meantime, while we are waiting for our International Congress to formulate laws, let each nation, State, city, and parish meet the question squarely, with suitable care for this class.

In this country it is a debatable question as to national, State, municipal, or county supervision. Very few States possess suitable climatic points for this class. National consumptive parks, consisting of small farms and truck gardens, with many tents and inexpensive cottages, located in a dry climate at a suitable altitude seem to be the reasonable solution. In this way the chief foci of infection will be removed from the country and placed in a most advantageous position for a recovery. At the same time it is to be noted that sputum in a high, dry, sunny climate is practically sterile as soon as dry, so these parks would not become infectious or pestiferous localities from long habitation.

In this connection I can not refrain from suggesting something along the same line for the prospective consumptives. Poor children born of tubercular parents, with bad lymphatic systems and reared in an atmosphere loaded with moisture and superabundance of bacteria, and who have improper, scant food, are certain to become tubercular as time rolls on unless environments are altered. It is for this class, who are very numerous, that so much good may be accomplished by a change of environment and by giving them good food and plenty of fresh air.

A national supervision would be most admirable but is probably impracticable; a county supervision is entirely feasible. It is the poor that need government protection. The well-to-do and rich have largely ceased to raise tubercular offspring. The trouble is forestalled by the

child being placed in the best climate, with good food, etc., to grow up into a healthy citizen.

The medical world is aroused upon the subject, as is evidenced by a continuous stream of literature from all quarters of the globe. Something has already been accomplished in lessening the number of deaths in the country. The mortuary certificates of five of our largest cities for 1900 show a decrease of 36 per cent from tuberculosis over 1890. This intimates that the trouble is not only being prevented to a degree, but is being handled in a more intelligent manner than ever.

With a course in public schools on hygiene, with special reference to tuberculosis, in fifteen years we will have a voting population who will indorse any suggestion from the International Congress of Tuberculosis. This is a young subject, yet vigorous. Some of the best brains of the world are devoting their energies to the prevention of the trouble.

While waiting for the educated board, international, national, and State laws, let each physician be true to his clientele by keeping the young from becoming tubercular by knowledge which is in the possession of all, at the same time placing those who are already tubercular in a suitable climate, in competent hands, and fumigating behind them. If we can and do but utilize the knowledge that is in our possession we will be able to largely forestall tuberculosis, and so reduce the death-rate from this cause that longevity may be increased several per cent.

ASHEVILLE, N. C.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, March 25, 1902, M. K. Allen, M. D., President pro tem, in the Chair.

Amputation Following Railroad Accident. Dr. Ewing Marshall: I have a patient here that I desire to bring before the Society. This young man, on October 16, 1898, in attempting to catch a train going at the rate of eight or ten miles an hour, fell, and the car wheels crushed off his right leg below the knee. The tissues were badly torn away from front to back of the leg. In front there was a fairly clean cut down to the bones, with the bare, jagged ends of the bones protruding an inch or so below. The muscles of the calf were more or less bruised, and extended three or four inches below the ends of the bones.

To give him the benefit of a good stump, with unimpaired knee-action, I sawed off the bones even with the short anterior flap and risked an irregular, bruised, and long posterior flap. Much of the bruised tissue sloughed, leaving the bones partially uncovered. I practiced sponge-grafting with fine success, and you see the resultant stump. The boy wore an artificial leg as soon as the stump would stand it until the fall of 1900; then the history is that he became "swollen" all over, and had such pain in his stump that he was unable to wear his artificial leg the whole of the winter of 1900-1. He began wearing it again, however, early in May, 1901, and wore it constantly and comfortably from that time until about the first of March, 1902. He then again became swollen all over, the general swelling lasting this time only four or five days, but though it passed away everywhere else it continued in the stump. He never noticed the purplish color in his stump until the first of March this year. There is at present no pain or tenderness about the stump, and only its size prevents the use of his artificial leg. He has never been a hard drinker, never going further than three or four drinks a day. You will notice the stump is still swollen and has a purplish color.

He had syphilis in 1893 and his condition was such in 1896 that he went to the hot springs at Mount Clemens, Mich., where he was greatly benefited. There has never been any stomach trouble, and he says his bowels and kidneys are regular. He passed a small quantity

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

of urine at my office yesterday; not enough to get the specific gravity, but it was found loaded with albumen. I would like for the members to examine the stump, and will be glad for any suggestions they may have to offer.

Discussion. Dr. F. W. Samuel: This is a most interesting case, and the operation itself has proven that it is unwise in injuries of this class to try and save structures which have been more or less devitalized as a result of the injury. I believe railroad surgeons at present are almost unanimous in their advice to practice high amputation in these cases, getting well above crushed and badly lacerated structures. In this case I believe it would have been better to amputate through the thigh instead of attempting to save the crushed and devitalized tissues below the knee. I am unable to say what bearing the history detailed by Dr. Marshall may have had upon the condition as we now see it. I find, upon examination, that the end of the stump is exceedingly tender; he can not bear the slightest pressure upon it, especially over the end of the tibia. I believe that there is beginning bone destruction and a secondary amputation should be done; also it will give a good stump for an artificial leg. Joints should always be avoided except in extreme cases that are not able to procure an artificial leg.

Dr. J. M. Krim: I agree with what has been said by Dr. Samuel. I do not believe the end of the bone is healthy. It is almost positive from the conditions present that there exists some bone lesion, and secondary amputation above the knee will have to be resorted to in the near future.

Dr. T. P. Satterwhite: The case is interesting from several points of view. I think Dr. Marshall did the correct thing in trying to save as much of the limb as possible. His ingenuity was considerably taxed as a surgeon to provide flaps for covering the ends of the bones under the circumstances. At the time of the accident we can not always tell just how much injury the tissues have sustained in the way of compression, etc. Unquestionably there is now present bone disease; however, I would not advise amputation just at this time; he is comparatively healthy-looking; he is a young person, and I would give him the benefit of the hope that it will be possible to avoid the necessity of amputation above the knee. We all know the higher we get in amputation the greater the risk to life, and Dr. Marshall, in my opinion, did perfectly right in amputating where he did. It is impossible sometimes to determine whether or not the tissues have been so devitalized by the injury that repair will not take place. I have no doubt that the

bones where Dr. Marshall sawed through them were perfectly sound at the time he amputated, and whether it was the injury that produced the condition as we now see it, or whether it is in some way due to the specific trouble from which the patient has suffered, it is impossible for us to say. At any rate, I would put this boy upon active specific treatment, hoping that this may be the cause of the present trouble, and await further developments before resorting to amputation above the knee.

Dr. G. B. Young: A feature in the case which has not so far been mentioned in the discussion is the probable relation between the renal involvement and the edema. While it is true the appearance of the stump would indicate a commencing bone lesion, at the same time the fact that he has on two previous occasions had a more or less general edema which slowly disappeared would lead us to at least consider whether or not the local edema which is still present may not be the remains of a general edema caused by renal insufficiency, its persistency here being due to the fact that the tissues about the stump are not normal in character. I would be disposed to put this boy upon treatment directed toward removing the edema, improving the action of the kidneys, etc., before I undertook to form a decided opinion as to the basis of the condition present.

Dr. Ewing Marshall: I am obliged to the gentlemen for their consideration of the case and the discussion also. I am strongly impressed with the idea that this boy has a granular kidney, due possibly to some degeneration. That he has had syphilis is certain, and I believe the combination of these two conditions is the underlying cause of the edema which has manifested itself. It is possible, of course, that a secondary amputation will have to be performed later. I did not see the patient in either attack of general edema; I only saw him recently, and as I wanted him to appear before the Society to-night, nothing absolutely has been done in the way of treatment. My idea is to put him on antisyphilitic treatment, with the addition of such remedies as will improve the kidney action.

Intussusception. Dr. F. W. Samuel: The following notes of a case of intussusception were given me by the family physician, Dr. F. L. Koontz: "D., female, aged twenty-one months; was attacked with a spell of vomiting at 5 o'clock in the evening of Saturday, March 15, 1902. The vomitus consisted of a large quantity of undigested banana. A physician was called, who administered essence of pepsin and fol-

lowed that with a dose of castor oil. At 2 o'clock the next morning the child had an attack of colic, but the physician was not summoned until 5 o'clock. He then repeated the oil and applied hot flannels to the abdomen, and the child seemed to be relieved. He was summoned again at 8 o'clock to find the child in convulsions. Consultation was then asked for. There had been no action from the bowels; temperature 102° F., pulse 108, pupils widely dilated, uniform, and no reaction to light. The convulsive twitching was confined to the right side exclusively, the left seemingly paralyzed. This convulsion lasted for eight hours, during which time the temperature went up to 106° F. The abdomen became distended and stercoraceous vomiting appeared, which established the diagnosis of intestinal obstruction. Inflation of the lower bowel with water was tried, with the patient in an inverted position. An abdominal binder was placed on the child and a stiff rubber catheter was inserted into the colon; to this was attached a piston syringe and the piston withdrawn slowly and very gradually; at the same time the binder was tightened one pin at a time from above downward. By this means the distention was considerably relieved. A glass tube was then inserted through the sphincters and gas began to come away. The distention was entirely relieved by this means. The bowels moved, the temperature came down to 102° F., the abdomen became soft, stercoraceous vomiting ceased, consciousness was partially regained, convulsive movements ceased, and the patient's condition was apparently much improved. By the next morning the bowels had moved several times. The pulse was now very fast, but responded slightly to stimulants; the bowels did not act any more that day, and by noon Monday the patient was pulseless at the wrist; she sank into a comatose condition, and died at 8 o'clock. The specimen will show the result of the autopsy. All of the invaginations, six in number, were involved in an inflammatory process, and all of them agglutinated.

I present the specimens for your examination. All of these invaginations occurred in the lower two thirds of the jejunum, which makes the case far more interesting, because invagination or telescoping of the bowel is much more rare in this part of the intestine than in the ileum or even the large bowel. The common site of intussusception, in the child as well as the adult, is in the small intestine, about the ileo-cecal valve.

The number of invaginations are also interesting, together with the great amount of bowel which is invaginated in each instance. As I

incise one of the invaginated portions you observe that the intussusceptum and intussusciens are firmly agglutinated, and that the intestine is largely denuded of its peritoneal coat. I did not see this patient during life, and the only information I have concerning it comes from the family physician. I have performed post-mortems in two cases where about the same conditions were noted, both cases occurring at the ileo-cecal junction.

Discussion. Dr. P. F. Barbour: The pathological specimens shown by Dr. Samuel are the most interesting ones that have been presented before this Society for a long time. I agree perfectly with Dr. Samuel that the proper treatment of intussusception is surgical intervention, but I am conservative enough to say that I think it is wise to try an enema of water, using pressure obtained from an elevation of three or four feet. When this method is tried, however, I would have a surgeon present, so if I do not succeed he can proceed to operate at once. Twenty-four hours is as long as it is safe for an intussusception to exist without operative measures for its relief. Beyond that time operation would probably not be successful if reduction was accomplished. Pediatricians to-day are almost a unit as to the advisability of early operative intervention in these cases.

Dr. Carl Weidner: When the doctor reported the history of the case the diagnosis of intussusception was quite clear in my mind. I would like to emphasize the point he has made—an important point in the differentiation between intussusception and obstruction of the bowel from other causes, namely, frequent passages from the bowel or frequent desire to go to stool, with the passage of mucoid and bloody material. Again, localized swelling or tumor on one side of the abdomen and extreme tympany on the other are points of importance. The invaginations in this case occurred higher up in the intestinal tract than is usual, which makes the case more interesting. When the intussusception occurs in the large bowel we can frequently detect it by introducing a finger into the rectum, as I have done in two cases.

As to the indication for treatment, we ought not to wait long. When the symptoms are such as to make it apparent that obstruction of the bowels has taken place operation should be resorted to promptly. I have had cases similar to the one reported by Dr. Samuel, which terminated in the same manner. They might not have so terminated had prompt surgical intervention been resorted to. In exceptional cases

adhesions may occur; the invaginated bowel may slough, and the patient will thereby be relieved, but we should not run these risks, therefore the indication is for prompt surgical measures.

Dr. T. P. Satterwhite: Unquestionably the prognosis is death in the great majority of cases of intussusception without prompt operation. With the symptoms that the child manifested in the case reported there was a possibility that life might have been saved by surgical means. We all know that surgical operations upon very young children are attended with considerable mortality, yet there is always a chance of life being preserved by early surgical intervention in cases such as the one reported. Exploratory operation, even in the child, is not extremely serious, and even if intussusception is not absolutely certain from the manifestations present—as we know the dangers attending such a condition—I am clearly of the opinion that prompt surgical intervention or exploratory operation should be resorted to in order to form a proper diagnosis, and to relieve the condition if possible.

Dr. F. W. Samuel: The subject of intestinal obstruction is so large that its limited discussion is extremely difficult. I want to emphasize what Drs. Barbour and Weidner have said. The diagnosis of intussusception in the child is usually arrived at early, by the fact that there is always straining at stool, the passage of small quantities of feces streaked with mucus and blood; frequently there is a tumor; in fact, a tumor is present in a large percentage of cases in the iliac fossa, which can be readily made out—the so-called sausage-shaped tumor—and examination per rectum reveals a mass where the intussusceptum has entered the intussusciens when it is low down in the tract. In rare instances it has been noted that nature has cured these conditions by adhesion and sloughing.

I want to again refer to the rarity of intussusception in this part of the bowel. I have looked through such literature as I have at my command on this subject and am unable to find the report of a single case where intussusception occurred in this particular location in children, therefore I regard it as exceedingly rare. Whether or not this case could have been relieved by operation I do not know, but we do know this much, that intestinal obstruction is a most serious condition, and the delay that usually occurs is responsible for many of the deaths following late operations.

The first paper that I ever read before this Society was a report of eight cases of intestinal obstruction, with eight deaths. I felt rather

timid at the time in making such an unfavorable report, but was encouraged by the statement of one of the older surgeons at that time that it was a good thing to report our failures, and that it might encourage others to report their own. All of these cases were operated upon after obstruction had existed eight or nine days. I felt that I had learned something from my results in these cases; I came to the conclusion that if we expected to do any good by means of operation in these cases surgery should be resorted to early. In operating for intussusception we must do so early, because the important thing is to reduce the gut from the invagination before adhesions have become firm, and if we wait three, four, or five days nature has so fixed the bowel that it is next to impossible for the surgeon to relieve the condition without doing great damage to the gut. If the gut is seriously damaged necrosis may occur with infection after you have reduced the gut, and with perforation afterward.

One point in the differential diagnosis I omitted: Intussusception occurs in children most frequently, while intestinal obstruction from other causes, such as volvulus, etc., is to be found in older persons. The diagnosis of intussusception in the child is comparatively easy, based upon the symptoms already outlined, remembering that intestinal obstruction in children seldom occurs from other causes. In older persons we may suspect the obstruction is due to volvulus, torsion, or adhesions from inflammatory conditions.

The essay of the evening, "Child Labor," was read by Philip F. Barbour, M. D. [See p. 361.]

Discussion. Dr. J. W. Irwin: This is a most interesting subject, and to consider it in its various phases would be worthy of some one whose ability would be far beyond my own. I am not prepared to go into statistics of child labor, therefore I can not do the matter justice. When we think of the number of little children who are running about the streets in various places, a feeling of pity comes over us, especially for those little children from three to seven and ten years of age who are forced to sell newspapers, etc., and mingle with all kinds of associates, good, bad, and indifferent, exposed to all kinds of vices. When we see the children employed as messengers by the telegraph and quick-delivery systems, children of such tender years, feelings of deep sympathy for the little ones are awakened. But the greatest

source of sympathy does not come from the manual labor they are required to perform, but from their associations. We have a greater curse under our own eyes here in Louisville than the people of the South have in employing child labor in mills and factories, where they are not surrounded or environed by evil associates.

I believe our reason will tell us that children employed in Southern mills and factories have better environments than those who are allowed to run carelessly and loosely about the streets of large cities. Physical labor is not the source of so much danger to the welfare of the child as environment.

Dr. T. P. Satterwhite: I do not know that a paper has ever been read before this Society of greater interest. The United States authorities, as well as those of other nations, are just now interested in this problem of child labor. Our own city, as you probably know, has recently legislated upon the matter. The paper is of interest to every person who is interested in the physical development of children, and I would like to suggest that in addition to its being published in medical print, which is only read by physicians, that it also be published in the secular press so that it may reach the public at large, who do not have access to medical journals. It is a magnificent paper, and one in which others besides physicians should be interested. It ought to be published in the newspapers, and by this means I am confident much good would be accomplished.

Dr. G. B. Young: I agree with Dr. Satterwhite that the paper is of such a nature that much importance and interest attach to it outside the limits of a purely professional aspect. The conditions which result from child labor should be considered not only from a purely medical aspect, not only from the standpoint of physical development of the child, the predisposition of the child to develop any particular type of disease as a result of its environment, but the moral aspect is unquestionably of paramount importance.

I agree with Dr. Irwin that we have in this city conditions in this respect which ought not to be, and which would not be if we could thoroughly arouse public sentiment. We all know that telegraph and other messenger boys are required to deliver messages at all kinds of questionable resorts at night, where they can not help seeing the vices that exist. In this way they acquire a familiarity with many evils and vices which can not result otherwise than harmfully. While the profession at large is supposed to be the custodian of public health, we

are more than that—or we ought to be at least—we are indirectly custodians of public morals, and I think it would be exceedingly desirable to have the paper which has been read to-night published in the secular press.

I believe there is a national organization for the purpose of promoting legislation to do away with the evils pointed out by Dr. Barbour, and if there is such an organization those of us who are interested in the matter ought to lend our assistance in suppressing the evils mentioned by active affiliation with that organization. It takes systematic organization to bring about such reforms.

Dr. Ewing Marshall: The points already brought out are the ones which especially interested me in connection with the paper. There is an allied subject which has interested me a great deal, and which I will take occasion to mention at this time, namely, the general strain put upon children by our present customs. Children are sent to school too young, and the school hours are too long; instead of increasing or adding to them by making two sessions, as has been proposed, the hours or sessions should be reduced. Four and a half hours per day, with an interval of half an hour for recess, is long enough for any child to be kept in the school-room.

Dr. Carl Weidner: I indorse most heartily and cheerfully everything that has been said by the previous speakers in regard to the paper, particularly the statement made by Dr. Young looking toward relief of the conditions which exist at the present time. We know that if the medical profession would stand together as a unit they could exert a tremendous influence. We also know that single-handed and without organization we have seen a great many disappointments in this respect. We can not expect anything but failure without perfect harmony and systematic organization. Still, each of us can do his share by educating the laity upon this question, which we recognize is of the utmost importance as one of the methods of preventing disease.

I am not sufficiently familiar with the laws of this or other States to know positively, but am under the impression that in this State at least we have a compulsory school law. This is one of the things that ought to be in existence whether it is or not. While it may be true that too long school hours may be harmful to young children, I think it is preferable to have them in school rather than allow them to work in factories. Our tobacco factories here are crowded with young female children who are entirely out of place, and these factories have become

the breeding places for incurable disease. I think in Germany there is a law that no child labor is allowed under the age of sixteen years. We know that the most dangerous period is about this time of life, because the body is tender and all the organs are practically undeveloped.

The question of child labor is of interest to the medical profession, but more so from a general sociological standpoint. I also indorse the proposition to have the paper read by Dr. Barbour published in some leading journal, not medical, but one having a large circulation.

I am sorry to hear the conditions which exist in the South as detailed by the essayist, especially as they must eventually lead to the marked deterioration, perhaps total destruction, of the white race.

Dr. M. K. Allen: I can distinctly remember when the first girls were employed in stores in this city. At the present time where I live I see great numbers of boys and girls going to their work in the morning and returning at night that ought to be in school.

Like some of the other gentlemen who have spoken, I think reforms along these lines must be accomplished through the secular press; the medical press does not reach the general public. We might publish this paper in every medical journal in the United States and it would not arouse much public sentiment, because the people it would thus reach are already converted to the ideas it inculcates.

I am sorry to hear that conditions exist in the South as outlined by Dr. Barbour, but like Dr. Irwin I believe evils of equal magnitude exist in our own city, and he has covered the ground as well as I could do it myself. There is no question in my mind but the close confinement of children in many of our large manufacturing establishments is conducive to ill-health and disease, as well as moral obliquity.

Dr. P. F. Barbour: The sociological principles involved in child labor have been thoroughly worked out by those who have been interested in the question. It was more particularly to bring out the views of the profession as to the physical effects that my paper was prepared, because these effects we can demonstrate more satisfactorily to the people than the moral or intellectual degeneration of these children.

Dr. Irwin's remarks are very pertinent. Certainly the telegraph and messenger boys, newsboys, etc., who work at night are thrown in the midst of very bad environments. We all recognize the moral dangers to which these children are constantly subjected, but Dr.

Irwin has seen more of this form of evil than of the evils of factory life; he is not thrown with children of the factories and sees nothing of that phase of the subject. The environment of a child working in a factory is just as bad morally as the environment of these small boys who ride bicycles about our streets. Factory life is not only injurious to the child morally, but the physical effects are so pronounced that we as physicians, who have the health of our communities in our hands, should give attention to the matter for that reason if for no other.

It was my purpose to enlist your interest in the subject and to call your attention to it rather than to give you any new or advanced views upon it. I must confess it is a subject which is so large that it would take a long time to discuss it as it ought to be in all its bearings, because it involves the basic views of the purposes of the Commonwealth and the political economy of our country. I had no idea myself, until I had looked into the subject, that child labor had become so common in the South, and it was a revelation to me that children were allowed by their parents to work for eleven and three quarters hours a day for the small sum of ten to fifteen cents per diem. I did not believe it was possible that any parent would be willing to allow his child to work that many hours for so small a compensation.

Unquestionably the moral life in factories is bad; I think even physically it is far worse than for those boys who run about the streets, because in the latter case they are at least out in the open air, whereas factory children are kept confined in a close, hot room, and they are required to stand there and watch the machine as it works. It is not physical exercise or exertion as we understand the process, though that is bad enough, so much as it is the exertion of constant strained attention which is so wearing upon these children. We, as physicians, must educate the public upon great problems of this character, for we more than any one else can speak authoritatively, and can foretell for these children what their future is going to be, what will be the effects upon their physical vitality, moral integrity, etc., from this character of labor.

Dr. Florence Brandeis: I do not care to discuss the paper, but would like to relate an experience I had recently: Two little children, girls, were sent to me not long ago, one aged eleven, the other nine years. The older one was questioned first; she said that her hands were sore and her wrists hurt her very much. I examined the hands and wrists and found them swollen and painful, but was unable to get

any further history from this child; there was no elevation of temperature, therefore the condition was not due to rheumatism, and I could elicit no history of an injury.

I then turned my attention to the little girl of nine years, and asked what she came to see me for, and she said for the same reason that the older child came. She told me, however, that she had fallen at a neighbor's house and hurt herself. This injury proved to be only a scratch or two about the face, which was of little consequence.

After some careful and persistent questioning, knowing something about the history of the family, I ascertained that these two little girls went to school regularly in the morning, but every afternoon they were worked in their father's cigar factory, and the injury to their hands and wrists was due to the peculiar twisting motion they have to go through in twisting the fillings of cigars.

I immediately communicated with the Neighborhood House, asking them to look into the condition of affairs, enlisting their assistance; the parents were notified, and the children were taken out of the factory in the afternoon.

I bandaged their hands and even put splints on their wrists to give them rest, and in a short time the inflammation and swelling subsided.

Even if we do have laws which prohibit child labor in factories, as I understand the matter there is no law which will prevent the father, mother, grandfather, guardian, etc., from putting the child to work at home. This cigar factory was under the parental roof, and I understand there is no law which will prevent child labor under such circumstances. They are able to evade the law by sending the child to school in the morning and then compelling it to work for five or six hours in the afternoon.

P. F. BARBOUR, M. D., *Secretary.*

IRITIS AND KERATITIS DUE TO MUMPS.—A. Pechin (Paris) reports the case of a young recruit who suffered a severe and prolonged attack of mumps, which began the middle of February. When the patient left the hospital on April 6th there was still considerable swelling of the parotids. The latter part of April he noticed impairment of vision and redness of the eyeball, but without pain, photophobia, or excessive lacrymation. When seen the last of May there was well-marked iritis in both eyes, with some corneal infiltration in the right. Under general treatment, with atropine and hot compresses to the eyes, there was slow improvement, with restoration of full vision in the left, and V. $\frac{1}{2}$ in the right.—*Recueil d'Ophthalmologie.*

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THE NEW PRESIDENT OF THE KENTUCKY STATE MEDICAL SOCIETY.

Dr. W. W. Richmond, of Clinton, Kentucky, who was elected President of the Kentucky State Medical Society at its forty-seventh



DR. W. W. RICHMOND.

annual meeting in Paducah last week, is one of the best-known practitioners in the State of Kentucky. Dr. Richmond graduated twenty-five years ago, and since that time has been actively engaged in the

practice of his profession. He is a self-made man and one of nature's noblemen, a gentleman at all times and under all circumstances. He has been a most faithful laborer in the field of medicine and surgery. Notwithstanding the fact that he is remote from a large medical center he has kept up with the progress of the profession. He is faithful in attendance at all the medical societies, both State and national as well as local, and in that way has been able to keep up with the progress of medicine. It is certain that his administration will be one of great value to the profession in this State. His good example of itself is sufficient to do much in advancing the profession, and a better man could not have been selected at this particular time, when the amalgamation of the local, State, and national societies is going on. We feel sure that the profession of the State are justly proud of our new President, and that every doctor within his jurisdiction will lend him whatever aid is within his power.

Current Surgical and Medical Selections.

REUNION OF THE ALUMNI ASSOCIATION OF THE LOUISVILLE MEDICAL COLLEGE.—Seventy-five of the old graduates of the Louisville Medical College responded to the invitation of the committee, composed of Drs. Adolph O. Pfingst, August Schachner, and Irvin Abell, and met in business and social session at Louisville on March 25th and 26th. The business session was called to order at the college building at 2 o'clock, March 25th, by the chairman of the committee. At the election which followed, officers were elected and installed as follows: President, Dr. R. C. McChord, of Lebanon, Ky.; Vice-presidents, Drs. August Schachner and Irvin Abell, of Louisville, and Dr. H. E. McKay, of Ruddock, La.; Secretary and Treasurer, Dr. Adolph O. Pfingst, of Louisville. The graduating class of this year, numbering thirty men, were admitted to membership as a body.

The Association took action on the death of Dr. George M. Warner, its late Secretary, and passed resolutions of sympathy and regret.

At the conclusion of the business meeting, the following papers were presented:

1. Asepsis of the Digestive Tract, by Dr. W. J. Leach, Class '97, Sellersburg, Ind.
2. Malaria—Its Prevention and Cure, by Dr. H. E. McKay, Class '94, Ruddock, La.
3. When to Operate for Appendicitis, by Dr. R. C. McChord, Class '75, Lebanon, Ky.
4. The Value of Some of the Early Symptoms of Pulmonary Tuberculosis, by Dr. Jas. A. Burroughs, Class '82, Asheville, N. C.

5. The Obligation Under Which the World lies to Medicine, by Dr. Arch Dixon, Class '77, Henderson, Ky.

6. Nervous Dyspepsia, by Dr. J. J. Moren, Class '94, Louisville, Ky.

7. Looking Backward, by Dr. J. E. Harris, Class '70, Bloomington, Ind.

8. Laboratory Work in General Practice, by Dr. Samuel E. Woody, Class '79, Louisville, Ky.

Much interest was manifested, and each paper was well discussed. At eight o'clock the Association met at the banquet table at the Galt House, nearly every class being represented, from 1870 to 1902, among the hundred members present. Dr. James Fowler presided as toastmaster. Toasts were responded to by Drs. R. C. McChord, A. M. Cartledge, S. E. Woody, George E. Hendon, and Roger Cahoon. Good-will and fellowship abounded and many reminiscences of college days were recalled.

On March 26th the members attended the commencement exercises at Macauley's Theatre. S. T. Taylor delivered the salutatory address. The valedictorian was C. M. Sandusky, of Kentucky. The Rt. Rev. Bishop Dudley also entertained the large audience with an interesting address.

Class honors were divided between John Richardson, jr., of Kentucky; C. M. Sandusky, of Kentucky, and C. E. Ryan, of Montana. The position of resident physician to the Louisville City Hospital was awarded to John Richardson, jr., a similar position to St. Joseph's Infirmary, of Louisville, to C. M. Sandusky.

After the exercises the Society adjourned, to meet again in 1903.

ADOLPH O. PFINGST, *Secretary.*

At the meeting of the Alumni Association of the Louisville Medical College, held March 25th, action was taken on the death of Dr. George M. Warner and the following resolutions adopted:

Resolved, That the Alumni Association of the Louisville Medical College, keenly feeling the loss of our associate, desire to formally testify our appreciation of his many sterling qualities.

That in the untimely death of Professor Warner the Alumni Association has lost one of its most cherished members and our alma mater one of her ablest and most valued teachers.

His calm, clear, and forceful presentation of any subject won for him the attention and admiration of his pupils. His gentleness and consideration were the cardinal virtues of his personality, and in the delicate relations of his private life the winsomeness of his character gained for him the esteem and confidence of every one with whom he became associated.

¶ *Resolved*, That these resolutions be spread upon the minutes of the Alumni Association, and that a copy be sent the bereaved family and the medical press of this city.

AUGUST SCHACHNER.

J. GARLAND SHERRILL.

TREATMENT OF INFLAMMATORY STENOSIS OF THE RECTUM.—Navarro, of Montevideo, draws attention to a certain group of cases of stenosis of the rectum following upon proctitis, in which the narrowing of the gut does not consist in annular stricture, but in a stenosis of the rectum as a whole, sometimes extending to the sigmoid flexure. While considerable improvement may follow on regulation of the diet and of the bowels and irrigation of the rectum, together with mechanical dilatation of the narrowed gut, this is often only temporary, and the troublesome symptoms associated with stricture of the rectum, namely, threatening intestinal obstruction, discharge and tenesmus, may continue. For such cases the author recommends the complete extirpation of the stenosed bowel by the abdomino-perineal method, as in dealing with cancer, and establishing an artificial anus in the left iliac region. He gives notes of three cases in which this method of treatment yielded excellent results; in two of these there was a history of syphilis, and the inflammation, suppuration, and stenosis of the rectum followed upon coitus per anum; in the third, the cause of the proctitis was not ascertained.—*Rev. de Chir., Paris.*

SMALLPOX AND CHICKEN-POX.—We have on several occasions referred to the difficulties which may arise in the differential diagnosis between smallpox and chicken-pox. Some of the metropolitan boroughs have already decided to make chicken-pox a notifiable disease under the Public Health Act, and the council of the borough of Paddington has now decided to do likewise. The council also, at the meeting held on January 7th, passed two resolutions: (a) urging the London County Council to put in force the powers conferred by Sub-section 6 of Section 56 of the Public Health (London) Act, 1891, with a view to making chicken-pox notifiable throughout the metropolis; and (b) to forward copies of the resolutions to the city and borough councils of the metropolis and to the councils of all the districts within Greater London. We also urge the public health committees of other boroughs to adopt a similar course. The addition of chicken-pox to those diseases which a medical practitioner is obliged by law to notify need not be a permanent one, but it might be enforced for a period of twelve months only, or until the present outbreak of smallpox has subsided. A correspondent sends us an interesting account of a family attacked with chicken-pox. Three children, aged respectively six, four, and two years, suffered from varicella at the same time. Two of the cases were of the ordinary type, but in the eldest child the eruption was very profuse and the amount of constitutional disturbance which followed was characterized by feverishness and headache. There were well-defined ulcers in the mouth and on the fauces. The child had been successfully vaccinated. In all three cases there were no premonitory symptoms, the rash being the first evidence of anything ailing the children. About a fortnight after the rash appeared on these children the mother gave birth to another child, who was born with four papules upon the body which developed into vesicles and ran the usual course without any further increase in number. Had the severe case above mentioned been an isolated one it might well have puzzled most practitioners as to whether it was one of chicken-pox or of smallpox.—*London Lancet.*

POSTPARTUM METASTATIC PANOPHTHALMITIS.—W. L. Pyle (Philadelphia) reports a case of this now rare disease.

The patient had a prolonged labor and instrumental delivery, followed by severe pain in the abdomen, high fever, and delirium. On the tenth day the right eye became inflamed and continued in that condition. When the patient was first seen, two and a half months later, although the cornea was clear and the iris not greatly altered in appearance, the eye was already atrophic. On microscopical examination it was impossible to determine whether the processes had originated in the choroid or retina, and no micro-organisms were detected by the Gram-Weigert method. (Proceedings of the Philadelphia County Medical Society, April, 1901.)

[This condition, happily now rare, was far more common before the application of antiseptic principles in midwifery. J. Schöbl, in his recent article on "Diseases of the Retina," speaks of having "concerning this eye affection, experiences as numerous as they are sad." He served in the Obstetric Clinic and in the Eye Clinic at Prague, and says: "I remember several days during which I saw daily more than twenty individuals suffering from puerperal fever, of whom four or five had metastatic eye disease."

In spite of the great change for the better cases of the kind still occur, and there is danger in the presence of the serious primary disease that the eye complications may be overlooked or neglected.—ED.]—*The American Journal Medical Sciences.*

STATISTICS OF RADICAL CURE OF HERNIA.—M. Lucas Championniere has performed, during the last twenty years, ten hundred and thirty operations for the radical cure of hernia, distributed as follows: Eight hundred and sixty-eight inguinal, eighty-two femoral, thirty-eight umbilical, fifteen epigastric, twenty-seven ventral. The results are best in inguinal hernia. There were only seven deaths among the ten hundred and thirty operations, giving a mortality of 0.68 per cent. In inguinal hernia the mortality was 0.57 per cent. The deaths were due to hypostatic pneumonia (three cases), strangulation by band, tetanus, and hemorrhage from the omentum. The longest series of operations without a death was one of two hundred and eighty-five cases. A truss is only recommended after operation in exceptional cases. The proportion of relapses was much higher in femoral (four out of eighty-two cases) than in inguinal hernia (thirty-two out of eight hundred and sixty-eight cases). He advises the wearing of a belt after operations for umbilical and ventral hernia, as in these the tendency to relapse is very much greater than in the other varieties. Inguinal hernia in women is always of congenital origin, and is capable of absolute cure by operation. Championniere never operates by Bassini's method. M. Berger, on the other hand, attributes the success he has obtained (one death in nine hundred operations) to the method of Bassini.—*Rev. de Chir., Paris.*

THE AMERICAN PRACTITIONER AND NEWS.

"*NEC TENUI PENNĀ.*"

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NO II.

Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

MALARIA; ITS PREVENTION AND CURE.

BY H. E. M'KAY, M. D.

The intermittent malarial fever is a type of fever that is present in the Louisiana cypress swamps six or eight months during the year. This is practically the only variety of fever seen in this locality excepting an occasional case of malarial hematuria, and this fever, I am forced to believe, is caused by the same poison that produces the simple intermittent fever. They differ in severity, but have many symptoms in common.

As all have had more or less experience with the simple chills and fever so often seen in nearly every State, I thought it might be of interest to describe two varieties of the intermittent type that I have been called upon to treat, and briefly refer to hematuria as seen here. The two varieties, comatose and algid, although belonging in the intermittent class, differ materially in many ways from the simpler varieties of this class of fevers. They present a chain of symptoms that are interesting to the physician, but are misleading to him unless he has had occasion to treat them before. Fortunately they are seldom seen, and then only when other forms of malaria are abundant and we are on our guard.

In the comatose variety, the malarial poison seems to exert its energy on the nervous system, and here produces unusual nervous conditions, from which we find a number of dangerous and alarming symptoms arising. The nervous disturbances are very marked, and these

* Read before the Alumni Society of the Louisville Medical College, March 25, 1902.

cases may terminate fatally during the first paroxysm, or, if they survive this, they recover very rapidly. Should another paroxysm occur, however, the patient's chances for recovery are very slight; for with each recurrence the symptoms grow more grave, and each time new complications appear that must be promptly overcome, making it impossible for the attending physician to offer encouragement as to the final outcome of the disease.

I have always found that the comatose fever was preceded from twenty-four to forty-eight hours by a simple intermittent paroxysm, which followed without any variations through the three stages common to this disease, viz., chill, fever, and sweating stage. Here no treatment has been given, and the malarial poison remains locked in the system; hence, when the next paroxysm is due, the milder type is dominated by the shock to the nervous system, and the result is the paroxysm becomes one of a pernicious character. This comatose condition is immediately preceded by a severe headache and drowsiness. We may see convulsive twitching of muscles or groups of muscles. Incessant vomiting, of a bilious nature, is always present. A chilly sensation of short duration marks the beginning of the attack. Seldom a chill is seen. When the patient is first seen by the physician he is in a stupor, or complete coma may have occurred. The patient has a flushed face, unevenly dilated pupils, and breathing is stutterous. The surface of the skin is bathed in a cold sweat, but if the temperature is taken per rectum 103 to 105 degrees are registered. The pulse is slow, but strong and full; tongue is broad and thick, showing a white coating, that becomes yellowish toward its base. The mouth is dry, and swallowing is difficult. The spleen and liver are both enlarged; bowels are constipated, and secretions from kidneys are scant and highly colored. If allowed to stand it becomes thick, showing quite a sediment. The patient has no control over the action of the bladder, and small quantities of urine are voided frequently. This condition soon gives way to one of a more alarming nature. The temperature, after six or eight hours, begins to fall rapidly and becomes subnormal. The pulse grows fast and irregular. At this time the coma begins to pass. The patient suffers no pain, but is in a state of collapse, and dissolution may take place suddenly. A favorable change is seen at this time in a rise of two or three degrees from this subnormal temperature, and contraction of the pupils and healthy action of the skin is noted. From this state the patient will rapidly convalesce,

and unless another paroxysm comes on in twenty-four to forty-eight hours the patient will soon be out again.

The algid variety always begins with a chill, but the chill is not severe or of long duration. The hot stage is absent, or is so short that the patient is hardly conscious of it. The peculiar feature of this fever is the subnormal temperature. This may go as low as 90 to 92 degrees. Cases have been known in which the temperature was 88 degrees. The patient with this low temperature complains of intense heat inside, and thirst is very annoying. The skin is cold and pale, and covered with a cold sweat. Pupils are dilated; pulse slow and irregular, while breathing is slow and shallow. Consciousness is never lost, but patient is free from pain and seems totally indifferent as to his dangerous condition. If these patients recover at all, their recovery is slow and tedious.

There is no form of malaria more dreaded by patient and physician than is the malarial hematuria. The physician who can save seventy-five per cent of those suffering from this disease should consider himself fortunate. The strong and healthy residents, who have resisted all other forms of malaria, are generally the ones who become victims of this disease, or at least such are the conclusions reached by my own experience with a number of cases. Out of thirty cases treated by me twenty were white (seventeen men and three women) and ten were negroes (eight men, one boy, one woman). In many instances the advent of this disease is insidious, while in others the paroxysm, accompanied by the red urine, comes without warning. In either case, as soon as the characteristic attack begins there is then a fight for life. The paroxysm does not differ materially from those seen in a simple intermittent attack, but the aching of limbs and intense pain in back, with the bloody urine, makes the diagnosis certain. The urine may vary from a light red color to black. Albumen is always present; vomiting is persistent and of a green, bilious character. The icteric condition of the skin soon makes its appearance, and is present throughout the whole course of the disease. I have seen bed linen dyed a yellowish-green color from secretions, and here, as in yellow fever, we have a characteristic odor given off from patient. The urine soon becomes scanty, and the patient has a desire to pass urine often, but the amount passed usually becomes less and less, until the patient can expel only a few drops at a time. The catheter may reveal the fact that there is urine in the bladder, although suppression of urine is

often seen. When there is suppression, all pain disappears and patient will soon pass into an unconscious condition, from which he may never rally. I had one patient recover after urine had been suppressed thirty-six hours.

Much can be done, even by the individual physician, to prevent the malarial conditions in his locality from becoming so violent. He can educate his patients to adopt a few simple precautionary measures, such as boiling and filtering their drinking water, keeping secretions of bowels and kidneys in healthy state, and refraining from alcoholic stimulants. They should learn to look with suspicion upon a dizzy headache. No matter how slight the headache may be, there will be found a lack of tone to appetite; bowels will be secreting a dry, colorless substance, and a general state of lassitude will be present. A good brisk cathartic at this time will put the patient in good condition, and nothing more will be needed. I find that those who follow this simple course are seldom sufferers from malaria.

In all cases of malaria the treatment should begin as soon as possible. In the simple intermittent form I invariably give a dose of acetanilid to shorten the attack, relieve headache, and also continue its use every two hours until the sweating stage is reached. When vomiting is persistent, cocaine $\frac{1}{8}$ gr. in cherry laurel water, or bismuth cream every half hour, will soon overcome it so we can proceed with other medication. As soon as possible a good cathartic should be given, and nothing will act more satisfactorily than calomel and soda. I seldom use more than three grains, and follow this with phosphate sodium until the bowels act freely. I would state here that some of our most learned writers fail to call attention to the use of any form of cathartic, relying wholly upon quinine to prevent the recurrence of the disease. My experience has been that after a thorough purgation we can control the patient and prevent the next chill with one half the quinine that would otherwise be required. I never care to begin the use of quinine until after the bowels have acted freely. We need not start our quinine until twelve hours before the paroxysm is due, and by giving it in solution we surely can bring our patient under the influence of the drug in plenty of time. I seldom give more than twenty-four grains, and the bisulphate is the salt I usually administer. This is more soluble, and has given me very satisfactory results. I put it up in syrup aurenti citrate, and give patient four grains every two hours until six doses are taken. I then stop quinine for twelve hours, beginning again

as on preceding day and giving quinine as before. As soon as danger of returning paroxysm is passed, patient should be put on a good iron and arsenic tonic and be instructed to look carefully after the bowels.

In the comatose and algid conditions our treatment must be one to sustain the patient. Start with hot foot-bath and give hypodermatic injections of strychnia every three or four hours. Give an enema of hot water, to which a teaspoonful of turpentine should be added. Bismuth cream or cocaine, used as above, will usually control vomiting; however, if these measures fail apply ice poultices to throat and neck of patient. As soon as patient's stomach is in condition to retain anything give a glass of hot milk, also full dose of bromide of ammonia. If we can not get patient to retain this, give an enema of hot milk and whisky. Sponge body often with hot water and dilute alcohol. As soon as practicable give five grains of calomel, and follow this with phosphate of sodium, forty grains every four hours until bowels act freely. Never delay the use of quinine longer than ten hours. If quinine can not be given by stomach, it must be given hypodermatically every four hours until stomach will retain same. If possible, I prefer to give the quinine in this way, in order to prevent the occurrence of abscesses usually produced by the hypodermatic use of this drug. The use of quinine must be kept up for forty-eight hours, and then a good iron tonic given. A prescription often used by me successfully is:

R Quinine sulphate, 1 gr.
 Reduced iron, 1 gr.
 Arsenious acid, $\frac{1}{50}$ gr.
 Strychnia sulphate, $\frac{1}{40}$ gr.
 Ext. gentian, $\frac{1}{4}$ gr.

M. Sig. One every four hours.

Then have patient take phosphate of sodium (forty grains) first thing every morning.

In hematuria I use same treatment as above to control vomiting. Then give calomel (one grain) every half hour until six or eight grains are given. Follow with phosphate of sodium, thirty grains every three hours until bowels are thoroughly cleansed. Strychnia nitrate should be given every four hours. For bloody urine I have been successful with the following:

R F. E. watermelon seed, 2 oz.
 F. E. corn silk, 1 $\frac{1}{2}$ oz.
 Tr. digitalis, 4 dr.

M. Sig. Teaspoonful every three or four hours.

Apply turpentine stupes to stomach, and patient should be given plenty of seltzer water. The skin should be bathed often with warm water. I seldom find it necessary to give an opiate in these cases. If fever goes high, give a five-grain dose of acetanilid every three hours. Give quinine after twelve hours, and keep up same from forty-eight to seventy-two hours, then put patient on tonic treatment as above. This treatment has saved twenty-eight out of thirty cases of hematuria for me, and I think others can get equally as good results if same treatment is carried out.

RUDDOCK, LA.

ASEPSIS OF THE DIGESTIVE TRACT.*

BY W. J. LEACH, M. D.

It is in the practice of surgery that we best utilize the principles of asepsis, and best realize the magnitude and efficiency of this principle, but there seems to be no good reason why asepsis is not as important and truly scientific in general medicine as it is in surgery, especially in the management and treatment of the digestive tract.

In the surgical treatment of any disease or injury we earnestly endeavor to secure asepsis, and then as earnestly strive to maintain it. To this we add physiological rest and support; then will naturally follow a return of the physiological state and restoration of function. This is the only rational plan of treatment in general medicine as well as in surgery, but if we fail to maintain any one of these principles throughout the course the whole treatment is a failure, and so it is in general medicine. Now, if asepsis is of first importance in the treatment of disease outside of the digestive tract, it is equally true in diseases of the digestive tract, because it being richly supplied with absorbent glands the patient quickly suffers from septic absorption when the tract is diseased, and were it not for the antiseptic agents inherent in the digestive tract, as for instance the hydrochloric acid in the stomach and the bile in the intestines, our patients would soon die from septic resorption.

One great difficulty is that we can not lay the digestive tract open and render it surgically clean, as in other parts of the body, therefore absolute asepsis of the tract is almost impossible to secure; but relative

* Read before the Alumni Society of the Louisville Medical College, March 25, 1902.

or practical asepsis we can secure, and that is sufficient in aiding natural forces to win the fight and save the patient.

The digestive tract often needs the attention of the physician, because in nearly every disease to which man is heir the digestive organs suffer greatly, either primarily or secondarily, especially if the disease is febrile in character. We notice this especially in such diseases as tuberculosis, typhoid fever, pneumonia, bronchitis, diphtheria, malaria, specific eruptive fevers, diseases of the generative organs, genito-urinary and circulatory organs, yet the lesions of these diseases are not in the digestive tract. Then, in addition to these, we have the diseases of the digestive organs. These are all familiar examples, and that being true, how many diseases have we which do not unfavorably influence the digestive organs? Scarcely any; and the first manifestation is indigestion, resulting in sepsis of the tract. Then from this point of view we conclude that nearly every patient for whom we prescribe needs special attention relative to the digestive tract; and certainly this rule is very often ignored by good practitioners. Indeed, if we can succeed in keeping the digestive organs in a physiologic state we secure for the patient the best possible weapon for the warfare, and in most cases the patient will need nothing more, but this does not exclude any specific treatment indicated. I say specific, because we have specific cures for a few diseases, for instance, quinine for malaria, mercury and iodides for syphilis, antitoxin for diphtheria, which agents act as antiseptics for these respective diseases and form a basis for their scientific treatment, but even in diseases in which we have specific remedies we can not afford to neglect the digestive tract.

In diseases which are characterized by hyperpyrexia, delirium, algnesia, and neuroses there is no more valuable therapeutic measure than rendering the digestive tract aseptic. In diseases of the circulatory organs all measures fail if the digestive organs are neglected. We frequently see children during dentition with a little fever, nausea and vomiting, tympanitis, and sometimes convulsions, which are relieved in a few hours by emptying the digestive tract and withholding or correcting the diet.

In surgery, especially abdominal surgery, who would expect to succeed without zealously caring for the digestive tract? Surely no one who has been trained in the Louisville Medical College. In obstetrical practice we often see the bad effects of indifference to the

digestive tract, and veratrum, morphine, and chloral, and emptying the uterus will not cure puerperal eclampsia without special care to empty and render aseptic the digestive tract.

Neurologists well recognize the fact that the essential feature of successful treatment of nervous diseases is to keep the digestive organ in an aseptic condition, thereby avoiding auto-intoxication and auto-infection, which is their constant and worst enemy. So, in treating any disease, even though its origin and lesion is outside the digestive tract, look well to the digestive organs and govern yourself accordingly.

Then we presume to have reminded you of the importance of asepsis of the digestive tract. The causes of gastro-intestinal sepsis are: First, ingestion of pathogenic bacteria; second, over-feeding and its consequences; third, local disease of the digestive organs; fourth, atony of the digestive organs; fifth, constipation. If we had a microscopic view of the food and drink which descends our gullets each day we would doubtless wonder that we live.

Over-feeding causes indigestion, resulting in fermentation. Gastro-intestinal fermentation is a complicated chemical process not thoroughly agreed upon, but its effects are well demonstrated, and the clinical evidences are auto-intoxication, tympanitis, pain, delirium, nausea and vomiting, anorexia, and undigested food in the stools, which are apt to be diarrheal in character. Local disease of the digestive organs is more frequently the result than the cause of sepsis, but may be contributory to the cause from the indigestion which results.

Atony of the digestive organs, secondary to and resulting from other diseases of the body, causes gastro-intestinal sepsis, because it lessens and alters the secretions of the digestive organs, which are the inherent antiseptic agents, hence results indigestion, fermentation, and sepsis. Constipation causes gastro-intestinal sepsis just as the blocking of the sewers of a city causes auto-sepsis of the whole population; therefore no one, sick or well, should be constipated.

After reviewing the various causes of gastro-intestinal sepsis we have a more logical basis for treatment and a more rational plan for maintaining asepsis of the canal when once secured, so we begin at the beginning and empty the canal from mouth to anus. Think of administering food and medicine to a stomach which is full of undigested and fermenting food, and whose walls are coated with thick, viscid mucus, and expecting this food and medicine to be effective! Sorely we often thus deceive ourselves. Then when the stomach is loaded and

foul we may give an emetic per mouth, or apomorphia hypodermically, which, by the way, is the best for adults; or practice gastric lavage, and after two flushings leave the stomach half full of sterile water and then administer a full dose of Epsom or Rochelle salts. Not waiting for the purgative to act, we use large enemas of sterile water or saline solution, allowing the water to remain for fifteen minutes before passing. If this does not remove all fecal accumulation repeat the enema and incorporate in it one ounce of Epsom salts, and inject it through a long colon tube introduced high behind a stream of water, as you will be less likely to do harm to the mucosa by allowing the water to flow during its introduction. If gas remains in the upper bowel, inject with the water one dram of turpentine; then, after the fluid has passed, reintroduce the colon tube high and allow it to remain for several hours, and you will find the gas escaping through the tube. If there is diarrhea use saline solution, and with it two ounces of olive oil.

Washing out the bowels is the quickest and best way of curing a diarrhea, because it washes away the cause. This colonic flushing should be practiced throughout the disease if there continues to accumulate gas, mucus, and undigested food in the colon. After we have thoroughly emptied the digestive canal we should withhold all food for at least twenty-four hours, but give an abundance of pure water and large doses of gastro-intestinal antiseptics, with a few broken doses of calomel to deplete the hepatic vessels. Remember that no patient can tolerate excessive tympanitis; the mechanical effects alone have killed many patients by interfering with the circulation and respiration, and indeed every vital organ will cease to functionate as the result of tympanitis. Then to maintain asepsis of the digestive tract diet is of the first importance.

The physician has no more important duty than to properly regulate the patient's diet; neither has he a more difficult task, and no treatment can succeed if this is overlooked. Remember that to give a teaspoonful of food more than can be digested means to encounter an unlimited amount of trouble. I am sure the proportions are not exaggerated, because the teaspoonful in excess will prevent the digestion of the whole meal and convert it into a fermenting mass of pabulum for bacterial growth. Patients do not starve for lack of food-giving, but from an inability to appropriate the food they receive. The kind and amount of food to be given will depend upon each individual case. If the lesion is in the stomach we should give a little less than

can be digested of both proteids and hydrocarbons, as the intestines can digest both kinds; but if the lesion is in the intestines give only of proteids, as the stomach can not digest hydrocarbons. In other words, give such food as is best adapted to the organ that is in the best physical condition, allowing the diseased organ to rest. If both organs are diseased give small quantities of mixed diet, allowing the patient to get hungry as soon as possible.

Gentlemen, we eat too much in health and feed too much in disease.

If our stomachs could talk
 They'd tell a bad tale
 On the guard or keeper, I fear;
 They'd rebel and they'd balk,
 'Gainst the cabbage and kale,
 And dressing and stale lager beer.
 'Tis our very best friend
 Which we often abuse,
 And give him the lash and the spur;
 But ah! then comes the end,
 And we see no excuse,
 For the gastro-enteric demur.
 If its wailings were heard,
 And its prayer listened to,
 Its plea'd be a light bill of fare;
 Of the dressing and bird,
 And fruit-cake and slaw,
 For God's sake send no more down here.

Then it is over-feeding that cripples the digestive organs and starves the patient, but patients never starve when properly fed unless they are victims of some malignant disease of the digestive organs, or in pernicious vomiting of pregnancy, in which latter case we can feed per rectum.

Drug Treatment. We have many valuable gastro-intestinal antiseptics, and every practitioner has his favorite. I have three which I think I can rely upon, namely, sulpho-carbolate of soda and carbonate of guaiacol for the whole tract, and hydrochloric acid for the stomach alone. We frequently combine the acid with scale pepsin and give after meals when the stomach is incapacitated, thereby aiding digestion as well as acting as an antiseptic. But sulpho-carbolate of soda has some remarkable qualities; first, it is a powerful antiseptic and yet devoid of toxic properties, thereby enabling us to give very large doses of a potent drug which gives us results at once. Dose, twenty to thirty grains every three hours. Second, it is sedative and non-irritating, and here it far excels the zinc salt, which if given in such

doses as indicated will produce emesis, like sulphate of zinc; and again the sulpho-carbolate of zinc is astringent, and we seldom need an astringent if we practice colonic flushing. Fourth, sulpho-carbolate of soda is neutral in reaction and applicable to either stomach or bowels, and is eliminated unchanged by the bowels and kidneys, therefore is an excellent urinary antiseptic. The more I use this drug the better I like it, and the less I fear gastro-intestinal diseases. I frequently combine it with fluid hydrastis, which is also an antiseptic, and is an excellent bitter tonic as well as a stimulant to the capillary circulation, but if I need a laxative I combine the soda salt with aromatic cascara sagrada or fluid extract of senna.

You will find some authorities very mum about sulpho-carbolate of soda, but try it, as I have done, and you will continue its use. In the last two years I have treated forty-one cases of typhoid fever, in which I used it almost exclusively as an intestinal antiseptic, with but one death, and that patient was a man seventy-six years of age, who was an invalid from chronic bronchitis and emphysema, and I really do not know which disease killed the patient. Of course I do not mean that sulpho-carbolate of soda was the only valuable therapeutic agent employed in the treatment of the cases, but I have never had such results when using other antiseptics, nor do I expect such results in the next forty-one cases.

To Recapitulate. First, asepsis of the digestive tract is of first importance in general medicine as well as surgery.

Second, sepsis of the digestive tract is generally present in any and all diseases, especially those which are febrile in character, and its manifestations are very numerous and very significant, and its effects are responsible for the greatest portion of death-rate.

Third, in the beginning of the treatment of each case render the canal thoroughly empty and aseptic, as heretofore indicated.

Fourth, maintain asepsis by careful diet, and if necessary give pre-digested food; also large doses of gastro-intestinal antiseptics, preventing accumulation of feces and gas by flushings and laxatives, being careful not to irritate the bowels with strong purgatives.

**SOME THINGS THAT SHOULD NOT BE FORGOTTEN BY THE
GENERAL PRACTITIONER.***

BY BITTLE C. KEISTER, A. M., M. D.

In an age of combines and commercialism it behooves the rational man of science to pause occasionally and take a view of his environment, lest he be unwontedly carried off with the swift current of the age and be hurried into the "pool of discord."

The general practitioner is confronted by many peculiar problems in this rapid age, and with your indulgence I will attempt to narrate a few of the most important.

The tendency of the medical profession seems to be developing into a state of "specialism" and "commercialism," and this fact should not be overlooked or treated too lightly by the general practitioner who would be loyal to his honorable calling. While I would honor the specialist as a teacher of his special branch of our great science, and also as a practitioner in certain recognized and limited spheres, yet I must deplore the tendency of the so-called modern specialist whose functions seem to extend far into the field and curtail the rightful duties of the general practitioner.

All honor to the well-grounded, educated, conscientious surgeon, gynecologist, and oculist, all of whom are the friends and co-workers of the general practitioner. In this age we have many pseudo-specialists, whose education and training are limited wholly to a superficial knowledge of their specialty, and whose functions are best known only to themselves.

Among this great army we have Prof. Osteopath, Dr. Cancer, Dr. Syphilis, Dr. Serum-Therapy, Dr. Water Cure, Dr. Gall Stone, Drs. Lung, Heart, Stomach, Kidney, and old Dr. Piles. All of these are the disgruntled and ungrateful descendants of the general practitioner, and to him alone should these specialties belong. Such divisions of the general practitioner's work are made solely for commercial purposes, and should not be recognized by the regular profession.

Any well-educated, well-equipped general practitioner should be able to do as good scientific work as any of these so-called specialists. To further emphasize this part of my subject, I desire to state from my personal knowledge the modern modes of teaching our great

* Present by invitation before the Tri-State Medical Association of Virginia and the Carolinas, at Asheville, N. C., February 26-28, 1902.

science in the universities and post-graduate schools of both the Old and New Worlds. I am convinced that the field and function of the general practitioner are rapidly becoming greater and broader with each passing decade; and on his shoulders and skill will depend the burden of future responsibility of the whole profession of medicine. The day has already come when the surgeon's knife is held in strict abeyance until the trained eye and ear of the general practitioner are made pre-requisites. This is as it should be, and the sooner these important facts are recognized by the entire profession the greater will be the success and honor attending the efforts of the conscientious surgeon.

There is no good reason why the general practitioner should not have a good working laboratory connected with his office and be able to make cultures and do as good work as the ordinary bacteriologist.

If we consider the lines on which medicine has advanced during the last quarter of the nineteenth century it can, I think, be shown that the most important results have come from the laboratory rather than the ward. Such a disease as diphtheria, for instance, had been most carefully watched clinically for many years, but it was the discovery of the bacillus and the laboratory work that resulted therefrom which made the rational "antitoxin" treatment possible. It was in the laboratory that Lord Lister worked out the principles on which his methods were founded, and which have led to the most wonderful improvement of the healing art that there has ever been. The recognition that anthrax is a pathogenic organism was the starting-point from which the great growth of bacteriology has arisen. Discoveries quickly followed. Obermeier found a spirillum in the blood of patients suffering from relapsing fever, and now there are a score or more of pathologic fungi which are known to be injurious to the human race, and include some of the greatest scourges of the present day. These are laboratory triumphs.

There are many diseases which from their characteristics would seem to be of parasitic origin, such as smallpox, cancer, rheumatism, etc., and we hope that we are on the eve of being able to demonstrate their specific microbe, but it is as yet hope only, not demonstration; they still withhold their secrets.

In the investigations alluded to above the results have been laboratory rather than clinical triumphs, though not entirely so. It is the harmonious union of the work from both sources that ensures success to the conscientious, energetic physician.

It is with cases suffering from disease of the alimentary, circulatory, respiratory, and urinary organs that most of our medical beds are filled. These afford an infinite amount of material for clinical study; yet, speaking broadly, it is in these groups that the smallest progress has been made of late years.

The general practitioner is afforded the very same opportunities to make a study of bacteriology and other important branches of the science of medicine as the specialist. He can take up post-graduate work at the universities and post-graduate schools with as much ease and profit to himself and his fellow-man as any one else. I know whereof I speak, and hope to impress these important facts upon the minds of the practitioners of this assemblage. The great demand of to-day, said a distinguished writer recently, is for well-grounded, well-rounded, educated physicians who can diagnose their cases of tuberculosis, diphtheria, typhoid, carcinoma, fibroid, appendicitis, brain tumor, etc., without the assistance of a specialist, who, perchance, is a hundred miles distant when his services are most needed.

Rational medicine requires for its successful practice a scientific equipment, such agencies as the microscope (with an oil-immersion lens and other smaller essentials), ophthalmoscope, phonendoscope, office operating chairs, etc., with a good up-to-date working laboratory adjoining his office. It has not been long since our methods of investigation, instruments of precision, and the many refinements of diagnosis were either undiscovered, or the few in use were to be found only in the larger universities. It has gradually become evident, however, that to complete a medical education it is necessary to establish a working laboratory, where the physician can study the conditions which exist in health and learn to appreciate the changes wrought by disease. He should gather lessons from a thorough study of physiologic chemistry and record many facts concerning the modifications of perverted functions by the application of suitable remedies.

Without these object-lessons many of the astounding advances of modern medicine could not have been made. By the aid of these medicine has made greater progress during the past three decades than it had made previously during as many centuries.

"The scientist must of necessity be a revolutionist—all things he must prove for himself." Richet has truly said: "By experiment and by science medicine is compelled to march forward." This is as true to-day as it was in the time of Harvey, and should encourage us in all

fields of medicine, wherever permissible, to make painstaking experiment and draw conscientious conclusions in the recognition and treatment of disease. We should not rest contented with the uncertain methods of our forefathers, but, with Lessing, we must proclaim "Not the bare truth, which everybody possesses, or thinks he possesses, but the earnest endeavor which was made to understand the whole truth, and to get at the foundation of it makes the true worth of a man." Ours is a profession which can ill afford to be satisfied with mere possession, but its power is best shown by its earnest search for truth. Ours is a task of blasting in the quarries of the unknown, where are hidden innumerable precious truths awaiting development. Thus may our noble art "gain the reach and certitude of sway over disease, which we all yearn for it to possess."

Sir Michael Foster has recently said: "The phenomena of disease, being phenomena of living beings, present themselves as mixed problems of physics, chemistry, and biology, to be grappled with by the general practitioner as they are grappled with by the physicist, chemist, and biologist."

"Diagnosis," says Dr. Eisener, "is the true password in the medical science of to-day, and this should be realized by many who continue satisfied with the uncertain methods of the past."

When Leube, in 1871, first recommended the stomach-tube for diagnostic purposes he cleared the way for the ready diagnosis of stomach diseases. Bacteriologic diagnosis of certain diseases has become a matter of routine importance with the scientific, up-to-date physician, and to him we shall look for the solution of many important problems in the prevention and recognition of disease. The number of lives annually saved by the application of bacteriologic methods in diagnosis of disease can not be estimated. It has been unjustly stated that the time occupied in making blood examinations with the microscope is out of proportion to the knowledge acquired. This is an unjust charge. To gain exact information of disease should be our aim, regardless of time and expense, but fortunately with our newer methods and modern technique a thorough blood examination can be made in less than forty minutes. These are important matters, and should not be forgotten by the general practitioner.

That most valuable instrument, the ophthalmoscope, should constitute one of the important adjuncts to the equipment of the general practitioner, by which he is enabled to recognize the grosser pathologic

changes in the eye, leading to a diagnosis of brain, kidney, and nerve lesions, that are so often overlooked and maltreated.

It is no secret that the charge has been made that too many patients in this country are often ignorantly and incompetently treated, and our medical schools and system of medical education are held responsible for this state of affairs. We must admit that we too often fail to stimulate the "scientific sense"; men are not educated to work systematically, and hence we fall short in many important essentials that go toward rounding up a thorough knowledge of the work in hand.

Many causes might be cited that contribute to this unfortunate state of affairs. A spirit of commercialism seems to have gotten hold of many of our American medical institutions, and as a natural sequence its influence is felt in the ranks of the profession. That unconquerable thirst for "filthy lucre" has been the indirect cause of more failures in, and has brought more discredit upon, the medical profession of the United States than all other causes combined. In this particular sense the profession has, I am sorry to say, retrograded from the old landmarks. This is, in part, due to the overcrowded condition of the profession and the multiplicity of medical colleges. According to reliable statistics our colleges are sending out six thousand graduates each year, or distributing annually to each State in the Union an average of one hundred and thirty-three doctors. If this continues ten years longer we will be able to boast of having one doctor to every three hundred of the population.

With this overcrowding of the profession it is but natural to conclude that competition will grow keener each year, and commercialism, specialism, and professional antagonism will keep pace with each other in the ratio of demand and supply. Are these crude, cold facts not worthy the careful and calm consideration of every unbiased, honest-thinking physician of the United States?

ROANOKE, VA.

OBSTRUCTIONS OF THE NASAL PASSAGES.*

BY M. F. COOMES, A. M., M. D.

*Professor of Physiology, Ophthalmology, Otology, and Laryngology in the Kentucky School of Medicine ;
a Member of the American Medical Association, the Kentucky State Medical Society, and the Louisville Clinical Society ; Ophthalmic Surgeon to Louisville City Hospital and the Kentucky School of Medicine Hospital ; Consulting Ophthalmic Surgeon to
Sis. Mary and Elizabeth Hospital, etc.*

Barring the presence of foreign bodies and occlusions as a result of acute traumatism, there are three things which obstruct the nasal passages. First, morbid growths, in the shape of tumors of one kind or another; secondly, malformations of the septum, either in the shape of exostoses or deflections, and thirdly, relaxed or hypertrophic conditions of the membrane covering the turbinated bones.

I will not attempt in this paper to give any statistics as to the frequency with which these different forms of obstructions occur, but will confine myself to the diagnosis and treatment.

Ocular inspection will enable us to determine in all instances whether the obstruction in the nasal passages is due to the presence of a morbid growth; that is, if a polyp or other tumor exists. It sometimes happens that there is a great deal of relaxation of the nasal mucous membrane. This relaxation is readily overcome by means of adrenalin, and once having the mucous membrane thoroughly contracted it will become a matter of little difficulty to determine the exact condition of the nasal passages, as to whether or not there exists a tumor. The shape of the supposed tumor and its color will frequently enable us to determine its nature.

Again, the use of adrenalin will enable us to determine the exact condition of the septum. It is a well-known fact to all of us that the septum is rarely a straight partition wall; the rule is that it deviates in nearly all persons. This deviation sometimes amounts to complete obstruction of one side of the nose; again, it may mean temporary obstruction, as in the case where the septum is close enough to the turbinated bone to produce closure when the erectile tissue covering that bone is distended. These deviations, when they have once been determined, can readily be understood by the surgeon, and the means of dealing with them also determined. Again, the determination of whether we are dealing with a relaxed nasal membrane or a tumor is set at rest by the liberal use of adrenalin. It shrinks the tissues

* Read at the meeting of the Ohio Valley Medical Association, May 1, 1902.

covering the turbinated bones and the septum, and will also blanch the surface of the tumor if such exists, and in this way we are enabled to make a perfect and complete inspection of the entire surface of the nasal mucous membrane, including that which covers the turbinated bones and the septum; in short, the anterior and posterior rhinoscopic examinations will enable us to determine the exact condition of the nasal passages. The diagnosis having once been made, the next thing under consideration will be the treatment. In general, it is good surgery to remove all tumors from the nasal passages, and in this connection it is very difficult to keep from referring to the pharyngeal box as well; however, there are some cases in which many of us would hesitate to undertake the removal of a growth from the nose, simply because of the fact that the patient would live longer by letting it remain than by attempting to remove it. These are cases of sarcomatous growths found in this locality. Fortunately, I have not yet met with a case where I deemed it advisable to let the growth remain. With our modern means of gaining entrance into the nasal passages all operations about this locality can be performed without very much danger to life. I will not attempt to detail here the various methods of getting into the nasal cavities, as such directions may be found in most of the works on general surgery, and all the works devoted especially to surgery of the nose. In many cases it is not a matter of choice with the surgeon—it is simply the choice that presents itself; so in nearly all cases where operative procedure is to take place the surgeon will make his own selection and modify the various operations devised for this purpose to suit the individual case. There is one operation, however, that I think there is very little good in, and it is certainly not to be recommended in private practice, and that is the Annandale operation, in which the hard palate is sawed in two and the halves separated so as to give a greater field to operate through. I do not believe that the end justifies the means, for the reason that the amount of advantage gained by this procedure is so little that in the final result I believe the surgeon would do a better operation, or do it more rapidly, if this bone were not separated.

Again, what instrument or instruments should be used in any particular case can not be here stated, for the reason that each individual case demands a certain form of instrument, some being more thoroughly dealt with by means of the snare, others by turning the nose to one side, or turning it down or up, as the case may be, and entering

the passages and detaching and removing the growth. Again, others may be removed by means of the cautery wire. I do not believe that there is much benefit gained by injecting tumors in the nose. If they can be reached with an injection they can also be reached by instruments which will remove them *en masse*—this method being much more preferable than that of having them slough out, with the chances of an incomplete removal.

The removal of bony growths from the septum and the removal of turbinated bones that are of abnormal size may be done with a chisel, with a knife, or with a scissors, or any of the various instruments which have been devised for that purpose—the location of the bone to be removed, that is, whether it is a spur from the septum, or whether it is an excessively long turbinated bone, determining the kind of instrument to be used.

Again, here I would like to note the fact of the very great value of the adrenalin solution in shrinking up the tissues in the nasal cavities, thus increasing the area of the operative field and making many of these operations bloodless.

Further, I have noted with great care the effect of the adrenalin in this kind of operative work, and I do not believe there is any more danger of hemorrhage when this drug is used than without it. I feel sure that the hemorrhages that have been laid to the door of this drug have been due to faulty packing of the nasal cavities by the surgeon after the operation has been performed. It is sure that you will have bleeding whether you use adrenalin or not, and there is no reason for believing that the adrenalin will make blood-vessels more liable to remain in a relaxed condition after it is used than before.

Lastly, and most important, is the dealing with the relaxed erectile tissues covering the inferior turbinated bones. When I say that ninety per cent of the disturbances, that is, obstructed breathing through the nostrils, is due to this condition, I am sure that I do not exaggerate, and this being the case it can readily be understood how important it is to manage this condition properly. All of us who have dealt in this kind of surgery know the results of excessive burning. The idea of Sajous, who first brought the operation of cauterizing the nasal mucous membrane into vogue, was to pass the hot needle through the nasal mucous membrane and burn the membrane and attach it to the bone—as it were, tuck it up. This mode was soon discontinued because of the excessive sloughing produced and the permanent injury done to many

noses by burning in this way. Cicatrices were left, and these old scars became covered with incrustations which had to be removed every day by some artificial means; in short, the nasal mucous membrane was so impaired that it could not functionate properly. Most of us now resort to the milder method of shrinking up the membrane with adrenalin and simply scorching the surface with the needle at cherry-red heat; this having been done, the patient is given a simple cleansing lotion of boric acid or carbolic acid in solution, or any other solution that may suit the fancy of the operator, this to be used with an atomizer two or three times a day, so as to insure cleanliness of the parts. The nose is inspected from day to day, or in some cases every four or five days, and at the end of ten days or two weeks, if the membrane does not appear to be sufficiently shrunk, the burning may be repeated, and so on until respiration is rendered free and easy. When respiration is free through the nostrils then many of the unpleasant symptoms immediately disappear, such as foul breath, hacking cough, and dry sensations about the pharynx and larynx.

LOUISVILLE.

INFECTION OF AN OVARIAN CYST BY THE TYPHOID BACILLUS.*

BY EDWIN WALKER, M. D.

The case which I have to report does not present anything entirely new. I have not, however, in a superficial examination of the literature been able to find a case exactly the same, although post-typhoid abscesses and cystitis have been noted. (Vaughan.)

The object in presenting this paper is not so much to report an unusual case as to direct your attention to the feasibility and necessity of accurate diagnosis. Not that in this particular instance was there any difference in treatment because the infection was from the typhoid bacillus, but in many cases the prognosis and treatment are much modified by the bacteriological findings. In all our surgical cases an accurate diagnosis of the condition is necessary, including, when possible, discovery of the exact nature of infection, if present. Vague methods of the past must give way to the progress of science. Before an operation is undertaken, the more accurately we have studied our case the more able are we to decide on the procedure most

*Read before the Ohio Valley Medical Society at Owensboro, Ky., May 1, 1902.

suitable. We should not forget in our operative work that the end in view is not a great surgical feat, but to benefit the patient, and an operation, no matter how brilliantly performed, is a failure unless it results in cure or relief of the sufferer in some way.

Besides, the careful scrutiny of our cases keeps us from falling into the error of attributing rises of temperature or other distinct symptoms to "congestion" or "engorgement" or "malaria," when they are due to infections which can be diagnosed and relieved; or, on the other hand, attribute them to "nervousness" or "reflex causes," and thus adopt a line of action which often causes delay and probably in the end total failure in the case.

I am more than ever convinced that the specialist in any line, be it surgery or not, is only a safe man after he has had years of general work and is familiar with all diseases and methods of diagnosis, and in each case not only makes out the condition calling for his special skill, but all other departures from the normal. This is trite, I know, but like the ten commandments needs to be repeated daily, "lest we forget."

Mrs. B., age twenty, was taken with fever in July, 1901. This developed into a typical typhoid, with fever rising in the evenings to 103° or 104°, diarrhea and rose-colored eruption. This condition continued until the fourth week, when she began to suffer pain in the lower abdomen; the fever increased, and a tumor made its appearance. This continued to enlarge rapidly and with exacerbations of pain, very severe at times, also chills, followed by rises of temperature. In October and November the fever was lower, but continued.

She came under my care December 31st. There was a large tumor in the abdomen, which could be distinctly seen. Her temperature was running about 101°. In order to determine that she really had typhoid fever, a Widal reaction was made, which resulted in the death and agglutination of the bacilli in seven minutes.

An operation was decided upon, which I did January 4th. A large dermoid cyst, containing a gallon or more of pus, was removed. The adhesions were extensive; on its superior portion the loosening of the omentum opened the tumor, and a large quantity of pus flowed into the abdomen. This point must have been perforated before, and was closed only by feeble adhesions to the omentum. Fully one quart of pus found its way into the abdominal cavity, and before the tumor was removed was widely disseminated. This was wiped out with gauze and gauze sponges. Sterile towels were also brought into requisition,

as the quantity was so large. Not a drop of water was used ; no irrigation of any kind. This was one of the best tests of the dry method I have ever had. Here was an abdomen in which a large quantity of pus was widely distributed, and the pus highly infectious, and the patient did excellently by cleaning it out by the dry method only. I have now had a number of such, and whereas a few years ago I feared to discard irrigation in these cases, now I do it without hesitation.

One other point : the abdomen was closed without drainage. We would have feared to do this before Clarke demonstrated its many dangers and taught us that it should be used only in exceptional cases.

The patient recovered, although not without some mural abscesses. From the pus taken from the tumor we cultivated a germ which gave alkaline reaction, and in all respects resembled the typhoid bacillus. Then we took the patient's blood and made the Widal reaction again, using the bacilli from the tumor, with the same result as before. Thus by the Widal reaction on our test for Eberth bacilli we proved that she had had typhoid fever ; then again, we killed the germs from the tumor with her blood, proving that they were the same.

This leaves in my mind no reasonable doubt that the bacillus had found their way from the intestines into the ovarian cyst and infected it. This caused a rapid growth and the temperature continued, because the germs were out of reach of the antitoxin in the blood, which would otherwise have killed them and thus terminated it.

WHEN SHOULD WE OPERATE FOR APPENDICITIS?*

BY R. C. M'CHORD, M. D.

That the subject of appendicitis is a well-worn theme there is no denying, and I feel very much like offering an apology for attempting even to discuss one phase of it, notwithstanding my earnest conviction that the question, When should we operate for appendicitis? is the most important and vital part of the subject. I assume that there are very few men in the profession to-day, whether they be physicians or surgeons, who have had large experience in dealing with appendicitis, who will contradict the statement that all really genuine cases of appendicitis sooner or later should be treated surgically. We should not be too dogmatic in our assertions as to who should be the proper one to

*Read before the Alumni Society of the Louisville Medical College, March 25, 1902.

deal with a case of appendicitis. There is a time for the physician as well as the surgeon, and they should go hand in hand, each understanding the other and the proper time to act.

It will be a happy time in our experience when the profession will frown down upon doctors' dictums, and look with derision and contempt on the medical tinker who will tell you he has treated so many dozen cases of appendicitis medicinally and has never lost a case, or the sawbones of a surgeon who boastfully declares that any man who would treat a case medicinally should be sued for malpractice. I have no patience with such men; and I believe it is inconsistent with greatness for any man to be very dogmatic on this subject.

It is not whether the majority of cases of appendicitis are safest under medical or surgical treatment, but it is for the physician or surgeon to know that there are many stages and phases of appendicitis; that it depends on the stage or phase of the disease as to whether it is to be treated at that time medically or surgically; but for both to recognize the dictum that every case of genuine, well-established appendicitis requires surgical interference sooner or later for its permanent cure, and that because a case recovers from an attack and seems well that this is not the last of it. By no means, no. One, two, four, or six months or as many years may pass without a recurrence, but I believe all cases recur, and the patient is always in danger until the appendix is removed.

I will not consume time to argue this point, because I think this point has been settled. Admitting, then, that all real, genuine, well-established cases require operation, when, I ask, is the proper time to operate?

Statistics teach us, and those who have had the most experience will tell you, that the result of operation depends on whether it is done in the acute stage. And by acute stage I mean the first twenty-four or thirty-six hours of the attack, or in the interim after the attack has passed and all inflammation has subsided. I do not hesitate to say that with an ideal diagnosis, ideal surroundings, and a good surgeon the time to operate is in the acute stage; but how often do we have all these factors in one? All patients who have appendicitis do not have ideal surroundings nor an ideal physician to make a diagnosis in twenty-four or thirty-six hours; on the contrary, the vast majority of them are not seen by the surgeon until too late to do an operation in the acute stage.

These are facts, not theories, that we have to face, and upon a judicious decision here hangs the lives of many. After the first thirty-six hours the inflammatory changes have been such that the surrounding tissues and the general system has become so surcharged with morbid material that to operate at this time is dangerous. It is just here that the physician and the surgeon frequently clash, and I am free to say the former gets the best of the argument. They should pull together here, bridge the patient through the attack, and when all inflammatory conditions have subsided ideal surroundings can be attained, and the surgeon can operate with assurance of a satisfactory result.

The danger line, then, in operating being after the first thirty-six hours up until the time when all inflammation has subsided, what is the reasonable probability that a patient can be bridged through this period? I believe it can be done in almost all cases that do not die before the first thirty-six or forty-eight hours if the case is managed properly from the beginning.

In all cases of real or supposed appendicitis the first effort should be to relieve the pain—not by filling the patient up with opium, but by cleaning out his stomach, particularly if he has recently eaten a hearty meal. This can be done by an emetic or stomach tube. Then clean out the colon with a long colon tube. By emptying the stomach you get rid of a great source of pain, irritation, and peristalsis in the small intestine; and by cleaning out the colon you free the bowel of a large fecal accumulation and gas, all factors of pain. You are thus able to make an easier diagnosis and to do away with the damaging and obscuring effects of an opiate.

Should the diagnosis be obscure, the inflammatory changes in the region of the appendix be such as to produce a real or partial obstruction, or should the surroundings and circumstances be such as to preclude an immediate operation, avoid anything in the nature of a purgative, stop all feeding by the stomach absolutely, and when food becomes necessary feed by rectal enemas with some of the concentrated foods in warm, normal salt solutions. In this way four ounces of this solution can be given every four hours for almost an indefinite period, and it will be taken up and assimilated with remarkable rapidity. By prohibiting all forms of food from being taken into the stomach peristalsis of the small intestines is prevented, and as they are the chief distributors of peritoneal infection in the abdominal cavity by their

vermicular motion, we are enabled to circumscribe the inflammation within a small area. You may have a bursted and gangrenous appendix, but if you keep the stomach and small intestines empty and in a quiescent state the omentum will give its undivided attention to the inflammatory foci, and in forty-eight hours it will have thrown its protecting folds around the infected area, and the worst that can happen will be a circumscribed abscess, which can be dealt with at the proper time surgically with comparative safety.

The mortality statistics of appendicitis are difficult to determine; but bearing on this point, as to when the operation should be done, I wish briefly to compare the results obtained by two representative surgeons of this country, viz., Dever, of Philadelphia, and Ochsner, of Chicago. The former may be said to represent that class of surgeons who advocate operating on all cases as soon as seen, irrespective of the stage, while the latter is an advocate of the plan of bridging them through the acute attack and operating on them in the interim. Dever reports 268 cases operated on at the German Hospital, Philadelphia, during the year 1900, with a mortality of 15.9 per cent, while Ochsner reports 565 cases operated on or treated at the Augustana Hospital, Chicago, from January 1, 1898, to May 1, 1901, with a mortality of 3.5 per cent. Ochsner's statistics contain all the patients entering Augustana Hospital within that period, even those who died a few hours after admission from general peritonitis.

Here we have a difference of twelve per cent in the mortality of the two surgeons. No one who knows Dever will say that this is due to the superior surgical ability of Ochsner over Dever. It is due to the fact that Ochsner selects the time to operate, while Dever does not.

LEBANON, KY.

LOOKING BACKWARD.*

BY JOHN E. HARRIS, M. D.

As a member of the graduating class of 1870, I may be pardoned for indulging retrospectively in a few glimpses of the lights and shadows of the days that were—of college days around which fond memory draws its enchanted circle. Confronting a condition and not a theory, it can truthfully be said that the advancement along the lines of medicine and surgery since then has been a revelation. Who can gainsay that the physicians of that eventful period did faithfully and studiously endeavor to solve the intricate problems for humanity's sake? With better means and ingenious measures the physician of to-day is amply qualified to meet the exigencies of the hour. Specialism was in its infancy, the family physician was in evidence, and yet the development of special branches of medicine and surgery have been conducive to deeper study and wider range of action. Yet it is to our teachers in the old days that our advancement is due. They were men of earnestness, of intellectual force and moral culture; men from whom we received a legacy of refining influences which impressed us with that altruistic spirit, the love of fellow-men, and inciting in us the determination to so environ ourselves with every material and mental equipment for antagonizing disease and deformity in the best possible way. An eminent professor, in a lecture to his class, interpolated the definition of a physician as one who must have the eye of an eagle, the heart of a lion, and the hand of a woman, and, it may be added, the sweet, subdued voice of sympathy. Observation, boldness, tenderness, and sympathy complete the quadrant of that circle which denotes the beloved physician.

But what of the faculty of our alma mater, who presided at the accouchement of her first-born? Some have merged into that transition from this life of mortal breath into that of life Elysian.

“ Leaves sombre and russett and ruddy,
Dead fruits of the fugitive years.
Some stained as with wine and made bloody,
And some as with tears.”

Henry Miller, grand, lovable old man; the affable Bullitt; genial Benson; dignified Gaillard; gentle Burch; scholarly Breckinridge, and jovial Wright. Last, but by no means least, the suave Ouchterlony and

* Read before the Alumni Society of the Louisville Medical College, March 25, 1902.

that prince of good fellows, Goodman, both yet active in the profession. They were a scintillant galaxy of superlative minds. The graduating class was composed of earnest students, who left the portals of the old college to devote their lives to relieving human suffering. Some of them are still unraveling the tangled skeins of medical problems and are weaving them in the loom of knowledge, while others have crossed the border-land that separates time from eternity, and are now far wiser than we.

Standing to-day in the dawn of the twentieth century and looking backward adown the vista of years, imagination reveals the shadowy outlines of the sowers of seed as they peer through the twilight of the past to the ever-present, and are asking each other questions of grave import. What of the fruitage? Have they gathered in the sheaves? Have they garnered the grain?

The field of the art and science of medicine has given bountifully of its richness and the toiling reapers are gladdened by its yield, the benefits of which are for the prevention and healing of disease. And so it is that the teachers of medicine and surgery of to-day, brilliant, skillful, and endowed with rare intellectual accomplishments, are sowing the seed for the betterment of generations yet unborn. The instructor of to-day was the student of yesterday, and he, by pen and voice and intense research into the mysteries yet unsolved, will, with an X-ray power, make clear the destiny of medical science.

BLOOMINGTON, IND.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE—MEETING IN CHARGE OF SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting, March 20, 1902, Robert F. Weir, M. D., President.

Operations for the relief of paralytic deformities, with special reference to tendon transplantation, was the subject for discussion.

Dr. Royal Whitman read the opening paper, entitled "Introduction; History; Indications for Operation."

He introduced the subject with a brief account of the objects of tendon transplantation, arthrodesis, and their combinations.

He said, with regard to tendon transplantation, that as each muscle had an essential function, its loss could never be entirely replaced;

therefore, even practical cure by this means was possible only when the paralysis was very limited in extent.

The operation was essentially palliative rather than curative, but as a means of lessening the tendency toward deformity and of improving function it was often of great service.

The actual results of the procedure had been obscured by premature and exaggerated reports of successful cases, but a careful study of the relation between the function of the normal part and the degree of disability would indicate what could actually be accomplished.

The original operation of Nicoladoni, of transplanting the two peronei tendons into the tendon Achillis, was of value in lessening the tendency toward deformity, but it was absurd to propose to replace the function of the great calf muscle by two feeble muscles working at a disadvantage. The same criticism might be made of the attempt to make one muscle perform two different acts at the same time, as when a portion of the calf muscle was attached to the tibialis anticus with the aim of aiding dorsal flexion. Nor was it reasonable to suppose that a weak muscle could carry out its own function and at the same time that of a more powerful neighbor, as in the original operation of Parrish, in which the extensor proprius pollicis was attached to the tendon of the paralyzed tibialis anticus.

Of the various modifications of the technique of tendon transplantation, that advocated by Lange of relieving a muscle completely of its former function and attaching its tendon directly to the periosteum at the point of greatest usefulness was perhaps the most important.

In the treatment of cerebral palsy, the relief of persistent palmar flexion of the hand by transferring the flexors of the wrist to the extensor aspect was a valuable application of the procedure.

Arthrodesis occupied a much more limited field. As a means of replacing apparatus it was by no means sufficient, since deformity usually recurred after the operation at the knee and hip, and even at the ankle-joint, when the part was unprotected. In exceptional instances it might be performed with advantage in the upper extremity.

The combination of tendon transplantation with arthrodesis or other operation was often of service. For example, the most effective procedure for the relief of paralytic talipes calcaneus, especially of the valgus type, was removal of the astragalus, arthrodesis, backward displacement of the foot, and transplantation of the peronei tendons to the os calcis, a treatment that he had thoroughly tested.

The operative treatment of severe paralytic disability must be conducted with the aim of supplementing rather than supplanting mechanical support.

A paper entitled "Deformities due to Muscular Paralysis; Method of Production; Possibilities in Tendon Transplantation; Combinations that have been made to correct Deformity," was read by Dr. W. R. Townsend.

He described the method of production of these deformities, spoke of possibilities of the operation and quoted from current literature the various combinations that had been employed by different surgeons.

He presented a young man, a patient upon whom he had operated two years previously, who had extreme drop-wrist. He divided the palmaris longus, flexor carpi radialis, and flexor carpi ulnaris where they entered the annular ligament, passed them through the interosseous space just above the pronator quadratus and fastened them to the extensor digitorum after shortening the latter by folding it upon itself. At present there is no drop-wrist and patient can extend the hand and flex the fingers very well.

Dr. V. P. Gibney read a paper entitled "Technique of Operation and Results obtained at the Hospital for Ruptured and Crippled."

First operation was performed at the hospital July 7, 1896, upon a girl ten years of age, whose polio-myelitis developed at age of one year. She had equino-valgus, with complete paralysis of the tibialis anticus. The tibialis anticus was exposed, along with the superficial tendons in the dorsum of the foot, the tendon at its insertion divided and passed through slits in the exterior proprius hallucis and over and under the division of the exterior longus digitorum. It was sutured to these by means of silk, wound closed with catgut, sterile dressings applied, and the foot was put up in moderate calcaneo-valgus position, after division of the tendon Achillis.

At last word, six months after operation, there was still a little valgus; muscles acted fairly well, yet weak. There was no limp. Since that time ninety-two operations had been done for the transplantation of tendons and muscles by the different surgeons connected with the hospital. The technique followed differed little from that employed elsewhere except in this particular—the skin incisions were along the vertical axis of the limb instead of the transverse or oblique.

He emphasized importance of thorough aseptic work and making the incision not larger than absolutely necessary to handle the tendons.

It was better to make two or more incisions and tunnel between these for passage of tendons rather than extensive subcutaneous dissection. The sheath of the tendon should be divided longitudinally and at the conclusion of the transference closed again with fine catgut.

Primary union was essential. It was safer to avoid touching the tendons for purpose of examination or section. Fine needles with silk were passed through the ends of tendons and then covered with sterilized gauze until ready for transplantation. The pinching of tendons with artery clamps, thumb forceps, or other instruments was to be avoided.

A very important detail of technique was a thorough anatomical knowledge of the tendons, their points of insertion, their relations one to another, and their action.

Statistics did not yet show which was better, grafting or transplantation of one tendon into another tendon, or into bone or periosteum. It is never desirable to transplant a lifeless tendon into a live one, but the live tendon should be transplanted into the point of attachment of the lifeless one. Suturing of tendons together is not always sufficient; where possible, end of tendon should be passed through button hole of another, end spread out, and quilt suture employed.

After tendons had been transferred, after the lengthened tendons had been shortened by looping or suturing or by sectioning and overlapping, test of position of foot should be made. He had discarded kangaroo tendon for tendon suturing, owing to size, and employed silk. He found it unnecessary to employ drainage save when extensive dissections were made, when he employed small drain for forty-eight hours. The hand or foot was put in a position of overcorrection and fixed with plaster of Paris bandage; parts not disturbed for two weeks, and even if healing was per priam position was maintained for some weeks; apparatus subsequently used for many months.

Of the operations, twenty-four for equino-valgus, thirteen for calcaneo-valgus, five for valgus, nineteen for equino-varus, twelve for equinus, three for calcaneus, ten for hemiplegic drop-wrist, five for dangle-leg, and one for congenital deformity of the thumb. With so many operators at all times exercising the greatest liberty, combinations of tendons would suggest themselves. The aim, however, had been to correct deformity and to place tendons where deformity could not easily occur and where best functional results might be expected.

The operations for correcting drop-foot and valgus had varied—a very common one was to make an incision one and a half inch in

length along the dorsum of the foot, beginning at tibio-tarsal joint and extending downward. Separate the skin beyond the extremity of the incision down to the tibialis anticus, divide the tendon, separate carefully from the underlying parts, pass it through a button-hole about the middle of the extensor proprius hallucis, and let it terminate among the divisions of the longus digitorum. The operation was often supplemented by subcutaneous division of the tendon Achillis. When one was desirous of raising the outer border of the foot, either the whole or part of the tendon of the tibialis anticus was extended to the peroneus tertius and brevis.

The following operation was frequently done when marked valgus existed and when the tibialis anticus was completely palsied: a part of the extensor proprius hallucis was passed through the tendon of the tibialis anticus and sutured into the posterior tibial at its insertion. Through same incision the tendons of the extensor longus digitorum might be shortened by overlapping and suturing.

Two cases presented feet with muscles so much paralyzed that through the anterior vertical incision tendons along the front of the foot were shortened and sewn firmly to the annular ligament so as to limit motion. The result in one at end of one and a half years was fair, that is, the patient could make voluntary flexion to ninety degrees without abducting the foot. In the other case the result was negative; by negative, he meant a condition in: *statu quo ante*.

The technique of the operation for relief of drop-wrist was yet incomplete. The procedures thus far employed were lateral incisions, one over the radial border and one over the ulnar border, with detachment of the flexor tendons and the insertion of the same into the extensor tendons. Again, the anterior and posterior incision about the middle and lower third of the forearm, then dissection through the interosseous space so that the flexor tendons could be transmitted to the extensor tendons. There had been five cases, with one good result, two fair, and two negative. In the earlier operations there was cicatrization in the interosseous space between the tissues in this locality and the tendons passed through. In two instances he attempted to meet this difficulty by implanting a scroll of celluloid in the interosseous space, removing it at end of four weeks to find tissues growing into the ends of the scroll. In one case he had used a solid cylindrical piece of celluloid in the interosseous space, removed same at end of three weeks and found a patulous opening, through which he passed the proximal

ends of the flexors and sutured them into the extensor communis digitorum with good results.

Of the ninety-two cases operated upon, he had succeeded in tracing and getting final results in sixty-nine. Good results were obtained in thirty-two per cent, fair in forty-four per cent, negative in twenty-four per cent.

Dr. Gibney further described the technique of a case of calcaneo-valgus with complete paralysis of all the posterior muscles, and the operation for dangle-leg, with report of five cases.

Dr. Gibney presented nine patients, showing the results of various operations for tendon transplantation and arthrodesis performed by Drs. Townsend, Whitman, and himself. The technique and results in these cases has been covered in the above abstract.

Dr. Joseph Collins read a paper entitled "Some Neurological Questions Involved in Tendon Transplantation," in which was pointed out: 1. The necessity for the more careful and persistent treatment of cases of anterior poliomyelitis, principally by the hypodermatic use of strychnine and by massage, in order that the natural irritability of the muscle fibre be continued as long as possible. 2. The necessity of differentiation as to causation and morbid dependency of the different forms of cerebral palsies, in order that appropriate cases for tendon transplantation or other operative procedure might not be allowed to go unaided; and 3, the neuro-mechanisms of tendon transplantation. These, as well as the psychological questions involved, were explained by word and diagram. In conclusion, Dr. Collins urged that the operation of tendon transplantation for function transference be given a wide scope of usefulness through more frequent employment of it, especially in cases of cerebral palsies.

Dr. R. H. Sayre said that the patients and the papers produced had presented the matter very clearly, and that there was little to add to either the theoretical or practical sides of the subject. In his own experience he had some very satisfactory results and others that were poor. In some instances more power had been gained than was anticipated, and in others there had been a stretching of tissues so that there was a partial return of the original disability.

Dr. B. Sachs considered the view taken by the readers of the papers very encouraging; many of the cases usually deemed hopeless were in reality capable of improvement; the operation was rational, and he thought operative procedure applicable to cerebral spastic cases

as well as to infantile spinal cases. He said the difficulty in operation lay in determining exactly which muscles were overacting and which were underacting, and the failures in determining this accounted for a great many of the negative and poor results.

Dr. Jacob Teschner remarked that he was pleased to hear that a more favorable prognosis should be given poliomyelitis, according to Dr. Collins. His aim in treating long standing poliomyelitis (three to twenty years' duration) had been first to build up the muscles to their highest possible capacity and then to determine whether or not operation would improve matters. In many cases he had found operative treatment unnecessary after such treatment. He agreed with Dr. Whitman in that no operation should be undertaken until at least two years after onset of the paralysis. As to the treatment referred to, he quoted from a paper of his in the *Annals of Surgery* (November, 1899), his views not having changed.

Dr. Henry Ling Taylor said it was to be remembered that tendon transplantation was still in the experimental stage, and that final conclusions could not yet be given. The idea that any paralytic foot or hand could be improved by tendon grafting and that apparatus could be eliminated was not founded on experience; in properly selected cases the procedure was of undoubted value. A very fair and conservative presentation of the subject had been given.

Dr. Russell A. Hibbs read a report of tendon transplantation operations performed at the New York Orthopedic Hospital. While the ultimate results had not been so good as the immediate ones, the operation seemed justifiable, for it made apparatus more effective. He thought the operation would probably prove to be an adjunct only to mechanical treatment.

Dr. T. Halstead Myers said the results recorded at the meeting were unusually good and encouraging; he considered it interesting to note that there had been no bad results. He believed the upper extremity offered a field for better results than the lower. He asked if, in transplanting flexors or other tendons, any valuable motion had been lost in these cases. He thought the removal of deforming contractions of equal importance with the increase of power.

Dr. Townsend replied that the original action of the tendons was destroyed.

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THE FORTY-SEVENTH ANNUAL MEETING OF THE KENTUCKY STATE MEDICAL SOCIETY.

The forty-seventh annual meeting of the Kentucky State Medical Society will be historical in at least one respect, and that is that it adopted the amalgamated constitution and by-laws unanimously. Now who says that doctors never agree? In this they acted wisely, and the readiness with which the new constitution was adopted was due almost entirely to the unceasing efforts of the committee to which the work of revising the old constitution was entrusted. Especially is Dr. J. N. McCormack to be credited with a large part of this work. His position and his knowledge of the wants of the profession rendered him especially fitted for the great work. He had educated the profession of the State up to the point of understanding the necessity for the change, and in that way there was no difficulty in securing its unanimous adoption.

The amount of scientific work done at the meeting was not up to the average, either in quantity or quality. Why this was so it is difficult to understand. The attendance was not large. This was possibly due to the fact that the place of meeting was so remote from many members. The Society will meet in Louisville next year, and we are of the opinion that Louisville should be the permanent place of meeting. It is centrally located and many doctors want to visit the city, and would attend the meetings when they would not otherwise do so.

INDIANA is now experiencing an epidemic of smallpox, and from the present outlook those in charge will not take the necessary steps to check its ravages until they are compelled to do so. It would seem that men high in authority should know better than to permit a disease like smallpox to continue when its spread can be prevented. Unless the State of Indiana takes some active measures to stay the progress of smallpox it is certain that the State of Kentucky will quarantine against her. We again assert that there should be a compulsory law as to vaccination. No man has a right to put his neighbor in jeopardy, and that is just what the unvaccinated man and the man that is roving about over the country with smallpox is doing.

OUR city Health Officer, Dr. M. K. Allen, is doing good work in the matter of keeping a sharp eye on the vendors of swill milk, stale meat, fish, etc. There should be a law prohibiting the exposure of fresh meats on blocks, shelves, or benches during this hot weather unless they are enclosed with screens in such a manner as to keep the flies away, as flies are known to be the bearers of all kinds of filth. The market-men need to be taught at least some of the lessons of cleanliness.

Current Surgical and Medical Selections.

ON THE TREATMENT OF DIABETES MELLITUS.—(Williamson, R. I. *The Medical Chronicle*.) In trying to form an opinion as to the value of any method of treatment in this disease, it is important to bear in mind that occasionally in some of the milder cases the sugar excretion may for a time disappear, apart from any influence of diet or drugs; also that the occurrence of complications such as phthisis, nephritis, etc., may cause a marked diminution in its excretion which, if care be not exercised, may appear to be the result of treatment. Furthermore, it is important to distinguish between the results due to diet and those due to drugs. For therapeutical purposes three forms of the disease are recognized:

1. The mildest form, in which the sugar excretion ceases when a rigid diet is given—these cases are to be distinguished from those of temporary glycosuria by the persistence of the excretion.

2. The more severe form, in which the sugar excretion does not cease on a rigid diet.

3. The most severe form, in which not only does a rigid diet fail to arrest the sugar excretion, but in addition the urine gives a dark brownish red coloration with perchloride of iron. In this form there is great danger of coma developing.

This classification of cases is not a scientific one, but is a very practical one for treatment. Before prescribing, it is also important to examine the lungs for signs of phthisis, especially in the second and third forms, and to examine the heart for signs of dilatation or other disease, especially in patients of more advanced age.

The weight of the patient should also be taken, and a record kept of it at regular intervals. In Dr. Williamson's opinion the weight of the patient is even a more important guide in carrying out treatment than is the exact amount of sugar excreted.

In prescribing a dietary, continental physicians have endeavored to calculate the value of the various food ingredients in calories according to the rule that one gram of proteid equals about four calories; one gram of carbohydrates equals about four calories; one gram of fat equals about nine calories.

From the total value of the diet in calories thus estimated the value in calories of the sugar loss is subtracted and the remainder should be not less than twenty-three hundred calories, the amount required daily by a healthy man. Such an estimation may be of service in indicating when the diabetic diet is deficient, but there are reasons for believing that such an estimation is not quite so scientific and valuable as at first sight may appear.

In commencing the dietetic treatment of diabetes a very rigid diet of nitrogenous and fatty food is prescribed at the outset to ascertain whether it is possible to arrest the sugar excretion thereby. This is useful in the first and second forms of the disease, but in the third form, in which the urine gives a reaction with perchloride of iron, it should not be tried, lest with a too rigid diet coma may supervene. Although a careful diet will cause the sugar excretion in the mildest cases to cease, in some the addition of even the smallest quantity of carbohydrates to the diet will induce a return of the sugar excretion, while others will be found to tolerate a certain amount of the carbohydrates, and in such cases it will be necessary only to restrict the diet sufficiently to prevent the excretion of sugar. It is also found that sometimes after an arrest for a short time by a rigid diet that the patient can tolerate more and more carbohydrate, but in others again, even after a prolonged period of rigid dieting, the addition of a small amount of bread or other carbohydrate will bring back the glycosuria. In such cases, should the patient on a rigid diet be found to lose weight rapidly, it will be necessary to relax and to be content if by moderate restriction we can keep the daily excretion of sugar down to about five hundred grains. In the second form the diet demands much care; if it is found that on a rigid diet the sugar excretion remains abundant and the patient's general condition becomes worse, a certain amount of carbohydrate food must be allowed in the form of ordinary bread and milk, fatty food, and especially cream and butter.

With regard to the third form, Dr. Williamson emphasizes Ebstein's rule that the appearance of a perchloride of iron reaction in the urine is an

indication for diminishing the albumin and increasing the carbohydrates in the diet. In this form fatty food is especially indicated, and a small quantity of spirits may frequently be of service in aiding its digestion. Milk contains about 4 per cent of objectionable milk sugar, but also much valuable fat and albumin; cream contains less milk sugar and seven times the amount of fat, and therefore may be allowed freely in all forms of diabetes. Dr. Williamson has prepared an artificial milk, practically free from sugar, which he says may be taken in unlimited quantities by diabetic patients in all forms of the disease. Four tablespoonfuls of cream are added to a pint of water and well mixed; the mixture is allowed to stand in a cool place and at the end of twelve hours the fat of the cream will have floated to the surface and can be skimmed off; to this are now added water, the white of an egg, and a little salt, and, if desired, a trace of saccharine. By practice an artificial milk can thus be prepared modified to suit the patient's taste.

In preparing the dietary for diabetes it is to be remembered that of the various carbohydrates starch is less injurious than sugar; fruit sugar is less injurious than cane and grape sugar, but fruit which contains much sugar should as a rule be forbidden. Bread is the article of diet which gives the greatest difficulty when a rigid diet is demanded. The substitutes usually employed are often unreliable and their taste disagreeable. Dr. Williamson prefers to have the bread substitute prepared in the patient's house or in the hospital, as being less expensive and more reliable. The following are, in his opinion, the most useful: gluten, soya biscuits and bread, almond cakes, and cocoanut cakes. The directions for preparing these are as follows: four ounces of almond or cocoanut flour is mixed with a little water and German yeast, the mixture allowed to stand in a warm place for about twenty minutes; an egg is then beaten up and a little water added, and the whole made into a paste. This is divided into cakes and cooked for fifteen or twenty minutes. Ebstein recommends aleuronat as an excellent substitute, and Dr. Williamson says that he has found that from mixed aleuronat and cocoanut powder very palatable cakes can be easily prepared. His directions are: two ounces of desiccated cocoanut powder mixed with a little German yeast and water and kept in a warm place for about twenty minutes, then two ounces of aleuronat are added and one egg and a little saccharine solution. The whole is well mixed, divided into cakes, and baked. When freshly prepared they are said to be very palatable, but by keeping the taste may become unpleasant. Recently Ebstein has recommended another vegetable albumin, ergon, an albumin from rice, and Pickardt has employed roberat, an albumin derived from corn. All these may be used in the preparations of puddings and other articles of food for diabetic patients. For the relief of thirst, dilute acid drinks are preferable to beer.

The patient should be relieved of mental anxiety and worry as much as possible, and the hours of work, business, or study should be diminished; a holiday with complete rest from work often has an excellent effect on such patients. While in the mild form open-air exercise may be of service, in the more severe forms vigorous exercise is injurious, and the fatigue induced by long railway journeys may be dangerous. It is well known that marriage has a most injurious effect on diabetic patients.—*Montreal Medical Journal.*

THE WEARING OF GLOVES AT OPERATIONS AND THE INFECTION OF WOUNDS FROM THE ATMOSPHERE.—(Alexis Thomson, M. D., F. R. C. S. Ed.) While all surgeons are agreed as to the necessity of reducing to a minimum the number of organisms gaining access to any wound, a considerable proportion are prejudiced against such refinements of technique as the wearing of gloves during operations. To these we cordially recommend the perusal of an interesting communication on this subject by Heile, of Breslau. Having arrived at the conclusion that it is impossible by any method to get rid of all the organisms from the skin of the hands, Mikulicz adopted the practice of wearing cotton gloves at aseptic operations, not with the object of doing away with the necessity of disinfecting the hands as thoroughly as possible, but as a means of further diminishing the number of organisms introduced into the wound. Some of the hand bacteria may filter through the meshes, but the great majority are retained in the gloves. The author has investigated this question of permeability by a number of experiments. Having smeared his hands with a culture of the bacilli of rabbit septicemia, he carried out a number of operations on rabbits, in one series with gloves and in another without them. The operation—a deep incision in the back along one side of the vertebral column, closed by sutures—was the same in all, and lasted exactly the same time, fifteen minutes; all the animals in both series died. An exactly similar set of operations was then performed, only the hands, after being infected, were mechanically washed for one minute, *i. e.*, very incompletely disinfected; under these conditions the wearing of gloves made an important difference, for all the animals operated upon without gloves died, while nearly half of those in which gloves were worn recovered.

The importance of changing the gloves at intervals was shown by another series of experiments: if the same gloves were used for a number (four) of operations, one after the other, they no longer protected the wound from infection; whereas, if they were changed after each operation, the number of organisms which passed through the meshes became smaller and smaller. For the details of these and other experiments the reader is referred to the original paper, but the author presents a strong case for the efficacy of gloves in diminishing the risks of wound infection so far as the hands of the operator and his assistants are concerned.

The next point investigated was the deposit of bacteria from the air of the theater upon the surface of the gloves. The author estimated the number of organisms deposited from the air of the theater by exposing large agar plates. The number varied with the disturbance of the atmosphere and with the presence and number of individuals in the theater, whether participants or spectators. While on the days between operations only three points of growth resulted after half an hour's exposure, the number rose during an operation to sixty or more. The number of points of growth was materially increased by merely walking about the theater, although clothed in an aseptic over-all, or by waving a sterilized towel so

as to circulate the air and its floating particles. The number was remarkably increased after the entrance of spectators into the theater. The effect of disturbing and separating dressings in which discharge had dried by evaporation was not only to disseminate organisms throughout the air of the theater, but it was found that they tend to cling in large numbers to the coat of the operator, rendering the latter a carrier of infectious material. Every one who is to enter the operating theater should put on an aseptic over-all immediately before entering, and preparations for the operation should be made as far as possible in an anteroom, so as to disturb the atmosphere of the theater as little as possible. The operator and his assistants must persistently avoid any contact with septic material, and must wear rubber gloves when obliged to operate or handle septic wounds or suppurating conditions, such as appendicitis. In aseptic work rubber gloves are not only a hindrance to manipulation but may be a source of danger, for if they are punctured or torn the accumulated perspiration and bacteria of the hand escape into the wound. Cotton gloves are worn in all aseptic procedures, especially in the handling of ligatures and sutures, and they should be changed at intervals during the course of the operation.

Surgeons who have not personally tried operating in cotton gloves are apt to think they will interfere with their manipulations, whereas the contrary is the case; they give a better grasp of the instruments, and especially of the ligatures and sutures. Doubtless they impair the accuracy of touch, for example in exploring the abdomen with the fingers introduced through a small incision; but for this purpose the glove is removed, the fingers are washed in saline solution, and are introduced into the belly; the necessary information having been obtained, the subsequent manipulations are performed with the gloved hands. In practice it is convenient to have several pairs of cotton gloves sterilized along with the gauze, towels, and over-alls in the metal drums in everyday use.—*Centralbl. f. Chir., Leipzig.*

AN UNUSUAL TUMOR OF THE SOFT PALATE.—(Ernest R. Brown, M. D.) The patient whose history is here presented was a male of about forty-five years of age. He came to the writer's clinic with the following complaint: For the past twenty-four or forty-eight hours he had been suffering great pain and inconvenience with what he described as a painful swelling of the throat.

On questioning him, the following information was elicited: He had always been strong and healthy, never having suffered from any illness, with the exception of two or three attacks of pain and swelling in the metatarsophalangeal joint of the great toe, and about the same number of attacks of a similar lesion to that for which he now sought relief.

Examination of the mouth and pharynx demonstrated a tender mass of vivid pink color, the size of a marble, situated on the right half of the soft palate.

This, on palpation, was firm and without fluctuation. The following interesting fact was mentioned by the patient at the time of examination:

He had noticed that the inflammatory attacks in the metatarso-phalangeal articulation had never occurred at the same time as the attacks similar to that for which he now sought relief, and further, it was his fixed conviction that such inflammation migrated from his foot to his throat.

On consideration, the diagnosis rested between a syphilitic gumma and a lesion due to gout. The former is by no means rare, but the latter is exceedingly so. The history and the appearance pointing against the possibility of this tumor being luetic in origin, the patient was treated for gout, which was followed almost immediately by a marked and rapid resolution of the tumor and all symptoms then present. This case is of interest from a diagnostic standpoint, as the similarity of the tumor to a gummatus infiltration was most marked, and indeed it is quite unlikely that the diagnosis made would have been possible, although one could not help noticing the extraordinary coloration quite characteristic of gouty lesions of these parts, if it had not been for a strong anti-venereal history, combined with one typical of what is commonly known as gout.—*The Montreal Medical Journal*.

OPTIC ATROPHY DUE TO MUMPS.—H. Dor (Lyons) reports two cases of optic atrophy following mumps, in which no other probable cause could be discovered. In one, the visual disturbance was not noted for several months after the attack of mumps. In the other, vision was markedly reduced in one month, and two months later the case had gone on to advanced atrophy.—*Transactions of the Thirteenth International Medical Congress*.

Special Notice.

PEPSIN is undoubtedly one of the most valuable digestive agents of our *Materia Medica*, PROVIDED A GOOD ARTICLE IS USED. ROBINSON'S LIME JUICE AND PEPSIN AND AROM. FLUID PEPSIN (see fourth cover page, this number) we can recommend as possessing merit of high order.

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THE AMERICAN PRACTITIONER AND NEWS.

"*NEC TENUI PENNA.*"

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

PERNICIOUS VOMITING OF PREGNANCY (Hyperemesis).*

BY J. M. KRIM, M. D.

Hyperemesis, or the pernicious vomiting of pregnancy, is fortunately a condition which is not of frequent occurrence, and the physician who is unfortunate enough to be called upon to treat such a case, or otherwise gets such a one under his care, would be many times thankful had he never seen the case.

I can not conceive any condition which in the course of events confronts the practitioner or obstetrician that is more trying or exacting in regard to management or medication than a case of pernicious vomiting in pregnancy, and I am sure that the members of the Society will agree with me after I give the brief details of three such cases that have come under my care.

CASE I. Mrs. E. V., aged twenty-seven years; married five years; second pregnancy; height five feet nine inches; weight one hundred and fifty-four pounds. She had been in perfect health up to the second month of this pregnancy, when moderate nausea and vomiting began. As she was feeling fairly comfortable at this time, no medication was deemed advisable.

Beginning with the third month, nausea and vomiting increased; there was almost complete loss of appetite; pulse 100; temperature normal; sleep restless. Various medicines usually recommended in such cases were given at this time, with no beneficial results. Absolute rest in bed was advised, with ice, iced milk, and champagne as

*Read before the Louisville Clinical Society, April 22, 1902. For discussion see page 472.

indicated. Various methods of medication were continued, without any favorable effect being obtained. The patient began losing flesh, pulse 100 to 120, temperature normal.

After various consultations being held, and the failure of all manner of medication and other means used in an effort to alleviate the condition, as the patient was losing ground rapidly—pulse 140, temperature 99° F., with continuous nausea and retching—abortion was decided upon, which was refused by the husband. However; he yielded the following morning, and dilating the os with my fingers I introduced a sound and ruptured the sac, and in about ten hours the abortion was completed.

The patient made a good recovery in about two months, and has borne two children since that time without any difficulty, and without any nausea or vomiting during the course of the gestations.

CASE 2. H. P., aged thirty years; married five years; first pregnancy; height five feet six inches; weight one hundred and thirty-four pounds. This woman was in perfect health up to the fifth month of pregnancy, when moderate nausea and vomiting began, with some impairment of appetite. The condition was apparently controlled by medication up to the latter part of the fifth month, when increased nausea and vomiting set in, which it was absolutely impossible to alleviate or control by any method or procedure. Rest was only procured by means of hypodermatic injections of morphine, retching even manifesting itself during sleep. Anorexia was now complete; temperature 99.5°, pulse 130. Rectal alimentation with beef peptonoids, bovine, milk, and panopepton was practiced for a time, but with no good results, nor was there any improvement in her condition.

After numerous consultations, abortion was decided upon, but was absolutely refused, the patient stating that she was very anxious to have the baby, and if the baby had to die she wanted to die with it, etc. (Incubators had not then come into use in this part of the country, or we might have offered her the inducement that the child might be raised by this method.) All coaxing and pleading on the part of the husband had no effect upon her determination not to have an abortion induced, and she finally succumbed, practically dying of exhaustion at the fifth and a half month of pregnancy.

CASE 3. J. K. S., aged thirty-six years; in the third month of her fifth pregnancy; height five feet seven inches; weight one hundred and thirty-two pounds. This woman had no trouble in her previous pregnancies, beyond slight nausea and vomiting. In this, her fifth

pregnancy, nausea and vomiting began in the ninth week and was progressive from the beginning.

Absolute rest in bed, all medication, and other methods of treatment failed to alleviate her condition; she began to lose flesh rapidly; anorexia complete; pulse 120, temperature 99°.

After consultation, abortion was decided upon. This being late at night, the abortion was to be performed the following morning. About three o'clock in the morning I was called to come at once, as she had decided pain in the abdomen, and it was feared she was dying. Reaching the house within half an hour, I found her laboring with an abortion, which proved to be true. After making a vaginal examination, I found the os slightly dilated, a portion of the membranes protruding, which were very tense, and by barely touching them rupture occurred and a large quantity of fluid came away. In a short time a four months' fetus was expelled and shortly afterward the afterbirth was delivered. Nausea and vomiting ceased that morning, and she began to eat and retain her food without any difficulty. Three weeks later she informed me that there must certainly be another child in her uterus, as she felt something moving. Upon making a careful examination I found that she was correct, and she went on to full term with this child without any further trouble from nausea or vomiting.

I take it that a condition such as occurred in this last case must be extremely rare, and would like for the members in their discussion to state whether they have met such cases.

LOUISVILLE.

CONVERGENT CONCOMITANT STRABISMUS.*

BY BENJAMIN L. W. FLOYD, M. D.

The field of vision of the two eyes overlap everywhere except about 40 degrees on the temporal side of each eye. When we look at a distant object the two eyes are brought into such a relation that the impression of the object is made on the central part of the retina, and we are said to be fixing on the object. Similarly, all other objects within the field of vision of the two eyes are seen by corresponding parts of each retina. The impressions that are made on the retinas are carried to the brain, and we are conscious of seeing only one object with the two eyes. This blending of the two objects into one is called binocular vision.

* Read before the Ohio Valley Medical Association, Owensboro, Ky., May 1 and 2, 1902.

Fuchs defines squint as "the deviation of the visual axis of one of the eyes from the correct position of fixation." Convergent squint, then, is the turning inward of one of the eyes, and divergent squint the turning outward of one of the eyes "from the correct position of fixation." Squint can be further divided into concomitant and paralytic.

The term concomitant is given to a form of squint as a contradistinction to paralytic squint, which is due to paralysis of one or more of the six external ocular muscles. In concomitant squint, the innervation being normal to all of the six external ocular muscles, the squinting eye accompanies the fixing eye in all its movements, and this defect in the parallelism of the two eyes or of their visual axes remains to the same degree, regardless of whatever direction the eyes are moved.

Moreover, if the better eye be covered and the squinting or defective eye be made to fix, the better eye turns inward to the same extent as the squinting eye does when the better eye is fixing. This deviation of the squinting eye is called the primary position of the squint, while the deviation of the better eye, when the squinting eye is fixing, is called the secondary position. The reason that the primary position and the secondary position are of the same degree in the concomitant form of squint is obvious to every one, for the external rectus of the squinting eye being associated in movements with the internal rectus of the fixing eye, the same innervation that caused the squinting eye to turn outward and fix the object when the better eye is shaded caused the fixing eye to turn inward, and hence the fixing eye now presents an internal squint of the same degree that the defective eye does when the better eye is fixing.

This is an important point, for it enables one to differentiate between this form of squint and the paralytic form, in which the secondary position of deviation is greater than the primary position, which is as easily explained as before. Since the external rectus now is paralyzed to a more or less extent, a greater innervation is sent out to the lagging-behind eye in the endeavor to turn the eye outward and cause it to fix the object, and this greater impulse causes the internal rectus of the better eye (which is always associated in movements with the external rectus of the squinting) to turn further inward than was the primary position of the squint.

Therefore, in the paralytic form of squint the secondary position is always greater than the primary position, while in the concomitant form they are of the same degree. There is another striking difference

between concomitant and paralytic squint, in that the patient does not complain of diplopia in the concomitant form, while in the paralytic form this is often mainly of what the patient complains and what causes him to consult a physician to see if something can not be done for his double vision.

Why is it that they do not suffer from diplopia in the concomitant form, for evidently an impression must be made on the retina of the squinting eye (if it is not too amblyopic to receive one) as well as on the fixing eye?

It was formerly thought that convergent concomitant squint being a quasi-physiological condition, the mind involuntarily suppresses the image of the squinting eye, just as any one fails to perceive extraneous sounds when listening to delightful strains of music or any interesting conversation, this being more easily accomplished since this form of squint usually manifests itself during the first few years of life, and is frequently accompanied with considerable refractive error. Doubtless this does take place in a certain percentage of cases, and especially in those where there is some obstruction in refractive media, or where there is marked astigmatism, but there are others where the refractive media is clear and the error of refraction is very small, and why do these not suffer from diplopia? In these cases one of two things occurs.

Either the region of the retina where the vision of the object is formed becomes functionally developed in some degree similar to the macula lutea, and you have binocular vision, or else diplopia is really present, although it is not complained of by the patient owing to his having become used to it, just as in looking through a microscope a skilled microscopist does not shut the eye not used, yet he sees only what is in focus on the slide of the microscope.

The reasons for saying that one of the two conditions occurs in these cases are :

1. It is no uncommon occurrence for patients who have been operated on for convergent concomitant squint to complain of crossed diplopia when there is no deviation outward of the eye in the least.

2. Intelligent patients often admit that they have diplopia in convergent concomitant squint if they are examined with a red glass over the fixing eye.

There are three forms of convergent concomitant squint, viz., periodic, alternating, and monolateral. Periodic, also known as intermittent or occasional squint, occurs under a variety of conditions.

Some squint only when viewing near objects; others when looking down; some only under strong emotional influences, while others under no assignable cause.

These patients usually have some refractive error, the proper correction of which gives good results, but they sometimes drift into constant monolateral squint, of which it is so frequently the forerunner. There is a form of periodic squint that returns every other day with as much regularity as a tertian ague, and one might be led to believe that it is due to malaria and apply the therapeutic test, but it is not due to this, since it is observed in England as well as on the continent and in America, and there is no malaria in England save those cases that are contracted by parties while elsewhere. Alternating squint is where they can fix with either eye without covering the other eye. This is the form of squint in which the laity think that both eyes are squinting at the same time. This is impossible from the nature of the case, and the condition is merely an alternating squint in which the right eye fixes and the left squints, and vice versa. This form of squint probably suffers less than the monolateral from neglect of treatment so far as the visual acuity is concerned, the reason for which is probably that the eyes, being used, do not suffer from total disuse. This form of squint usually occurs in one of two conditions. Either the visual acuity of the two eyes are about the same, and it is immaterial which eye they use for fixing, or there is a great difference in the refraction of the two eyes, and one is used for distant vision and the other for near vision. From the experience of M. C. Worth, of London (which is greater than that of any other person when we come to consider squint, so far as I am aware), it is the most unsatisfactory to treat, and the reason will be easy to understand when we come to consider the etiology and treatment.

Constant monolateral is where the squint is always in one eye, and of the constant convergent squint about 89 per cent is monolateral and 11 per cent alternating. But monolateral squint is in reality a binocular ocular trouble, and when we say that a patient squints with the left eye we really mean that there is an abnormal convergence, and the right, being the better eye, is the fixing eye, and both make a conjugate movement to the right, and the right is straight and fixes, while the left has its deviation doubled.

The age at which convergent squint first appears is interesting as well as instructive. According to Mr. Worth's statistics, which amounts

to almost thirteen hundred cases, he was able to get a history as to time in eight hundred and nine of them, viz.: "Before one year of age, one hundred and two, or about $12\frac{1}{2}$ per cent; between one and two years, one hundred and forty-two, or about $17\frac{1}{2}$ per cent; between two and three years, one hundred and ninety-five, or about $24\frac{1}{2}$ per cent; between three and four years, one hundred and fifty-nine, or about $19\frac{1}{2}$ per cent; between four and five years, ninety-one, or about 11 per cent; between five and six years, fifty-eight, or about 7 per cent, and after six years of age about $7\frac{1}{2}$ per cent develops." So it is shown from Mr. Worth's statistics that 74 per cent appear before the fourth year of age and that only $7\frac{1}{2}$ per cent develop after the sixth year of age.

Mr. Worth has shown that if these children are examined when the squint first develops, by using various sized balls that will correspond to a test letter, that these children will have some amblyopia in the squinting eye, but it always has the power of fixation when the better eye is covered. But if these cases are left to take their own course, or if the routine treatment of prescribing glasses is given them after they have arrived at the age of six years or more, the squinting eye has become more amblyopic, and some have lost the power of fixation in the squinting eye. This loss of the power of fixation is more apt to occur in young squinters, and so likely are they to lose the power of fixation that it is considered by many ophthalmologists a very amblyopic eye that squints before twelve months of age. In speaking of squint in infants, I do not allude to that transitory form which is due to some gastric disturbance or insignificant trouble, as this form of squint means nothing, but to that constant convergent squint that may, and often does, show itself in early infancy and which should have attention.

If the deviation remains while the other eye fixes, and if the squint is always in the same eye, it is a case that will likely be a constant monolateral squint.

Etiology. It has long been noticed that where there was any trouble in the refractive media, so as to prevent binocular vision, that the defective eye would turn inward, from the close association of accommodation and convergence.

If this applies to cases where there are obstructions in the refractive media it will also apply to eyes that are more or less congenitally amblyopic and can not see from the reason that the retina is not sufficiently sensitive to impressions made on it by objects within its field of

vision. Schweigger thinks that 30 per cent of the cases of convergent squint is due to congenital amblyopia; Swanzy thinks it is higher.

While this explains why these squint, how about the large percentage of cases where there is no obstruction in the refractive media, and the eye is not so congenitally amblyopic if tested at the first appearance of squint as to cause this condition?

Donders sought to explain it on the ground that almost all these squinters being hyperopic and astigmatic, it was due to their refractive error, for these patients had to accommodate in order to see distinctly, and as accommodation and convergence are closely associated, they preferred distinct vision with an abnormal convergence to indistinct vision with normal convergence.

That hypermetropia is a cause of squint Donders proceeded to prove by having a person with no squint look at some test-type and shading one eye and placing a concave glass of a few dioptries before the uncovered eye, causing the patient to accommodate in order to see the letters, observed that the covered eye converged. This he considered as absolute proof of his position, for he had developed artificial convergent squint by increasing the accommodative effort.

It was also observed that in hyperopic children, when they had to keep one eye bound for some time, it would often converge and sometimes remain so permanently.

Ever since Donder's study of this trouble, hypermetropia and hyperopic astigmatism has been accepted as the cause of convergent concomitant squint by most ophthalmologists.

While it is true that this refractive error is present in most of the cases of convergent concomitant squint, does it explain the squint in all cases? Are there not other more important causes than those the refractive error produces? That Donder's explanation does not solve the problem can no more ably be stated than has been done by Schweigger, who has said:

"First. If Donder's theory be complete, convergent squint must always appear whenever there is binocular hypermetropia along with the conditions which reduces the value of binocular vision.

"But squint is often absent while the degree of ametropia is markedly different in the two eyes or while the acuteness of vision is very defective in one eye.

"Second. According to Donder's theory, the higher the degree of hyperopia the greater should be the tendency to squint, and yet clinical observations show that this is not the case.

"Third. In periodic squint, the influence of hyperopia and the accommodative effort is very evident, and yet these cases only go to show that while hyperopia is very frequently one of the causes of squint, it is not the only one, or the most important one; for here clearly some factor necessary for the production of permanent squint is wanting.

"Fourth. Donders's theory fails to explain the occurrence of convergent squint in emmetropic and myopic individuals where, of course, no excessive effort of accommodation is required."

There are others who hold that squint is a muscular trouble, and that it is due to the preponderance of power in the internal rectus over the external rectus. According to Mr. Worth's experience, his statistics are overwhelmingly against it being classed as a muscular trouble, for, out of all his cases, he found independent outward rotation in each eye to be quite normal in 83.2 per cent of them. There was some slight defect in outward rotation in each eye in 9 per cent of them, while in only 7.8 per cent was there a defect in outward rotation of the squinting eye. Heredity seems to play some part in this trouble, for out of his thirteen hundred cases he was able to get a history of squint in father, mother, sister, or brother in no less than 51 per cent of the cases. Priestly Smith holds to somewhat different views as to the cause of squint than was taught by Donders, and while admitting that congenital amblyopia is the cause of some, and hyperopia, as shown by Donders, may be the occasion for other children to squint that are afflicted with this error, thinks that too much stress must not be laid to the refractive error, "for most all children are more or less hyperopic, and the vast majority of hyperopes of all ages never squint, and some squinters have little or no hyperopia, and some even emmetropic."

He thinks that squint is produced in the following manner: "At birth an infant's vision being merely a perception of light, their eye movements are involuntary and purposeless. As the organs develop they learn to control and direct them simultaneously to a certain object, and to fuse the two retinal impressions into one mental picture and to recognize the forms of objects."

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, April 8, 1902, the Vice-President, Irvin Abell, M. D., in the Chair.

Epithelioma of the Forearm. Dr. Ewing Marshall: This gentleman, Mr. K., aged seventy-three years, you will notice has an ulcerated spot on his left forearm about an inch above the wrist joint; this spot is fully two inches long and one and a half inches wide. It was first noticed, he says, as a small pimple the first week in January of this year. He also states that his arm and hand were swollen at one time, but there is no swelling present now.

I saw this man for the first time about a week ago, at which time this patch was very ugly looking; it was very red, and had a peculiar worm-eaten appearance, especially about the edges. It has never given him much pain. I would like the members to examine this sore and give me such suggestions as may occur to them about the proper management of the case.

Discussion. Dr. T. P. Satterwhite: I think this is unquestionably a case of epithelioma, although the disease has advanced very rapidly for an epithelioma. Usually epitheliomata are slow in their development. This man is far advanced in age and does not suffer any pain, and of course this is a matter which we should take into consideration as to whether we ought to advise amputation of his arm or not.

I received a letter from my son, Dr. Preston Satterwhite, in New York, a few days ago, and he says the New York doctors are just at this time very much interested in the X-ray treatment of malignant disease, especially the skin cancers. He says that Dr. Coley, who has quite a reputation in the treatment of malignant disease by another plan, is very enthusiastic over the use of the X-ray, and some wonderful cures have been made.

If I were Dr. Marshall, I would give this man the benefit of a thorough trial by means of the X-ray before advising any other form of treatment. It seems to be a case which would be especially adapted to this form of treatment.

Dr. J. M. Krim: I agree with Dr. Satterwhite in the diagnosis that it is an epithelioma. I have had two cases recently under treatment with the X-ray apparatus; in one there was a marked improvement,

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

the other one left here and went to New York to see another physician, who used the X-ray, and he came back without any improvement in his condition. Since he returned I have been using a strong solution of the chloride of zinc as a local application. It gave him considerable pain for the first four or five applications, but since then he has not complained of pain, using a twenty-five per cent ichthyol dressing. The growth is getting much smaller under this form of treatment.

Another case that I saw about a month ago has been under various methods of treatment in this city, by quacks and others; it is a very bad case, and what the outcome will be I do not know.

In the case before us I would make a moderate amount of burning, either with chloride of zinc or arsenic paste, then dress with ichthyol, twenty-five per cent, and I think he will make a good recovery.

Dr. W. F. Boggess: I have seen a number of cases of epitheliomata of the skin where very satisfactory results have been obtained by the use of the actual cautery. Dr. Vance, by whose courtesy I saw some of these cases, has a wonderful record with epitheliomata that have been completely destroyed by the use of the actual cautery; some of them were quite large. He tells me that application of the actual cautery is almost free from pain; it is done quickly, and if done thoroughly I believe it will eradicate the disease. I am sure if Dr. Marshall had used the actual cautery upon this ulcer in the early stages that it would have been entirely cured; and I do not know that the present condition is so far advanced that the cautery would not be useful and might produce relief.

The tendency of skin epitheliomata of this character is not to recur rapidly or frequently, and if once thoroughly eradicated they are likely to remain so for quite a length of time at least.

Dr. Irvin Abell: It is true, as Dr. Boggess has stated, that these skin epitheliomata are of slow growth and do not recur with the rapidity that the other varieties of malignant processes do, nor are they as rapid in their destruction of life. When eradicated thoroughly by any of the methods mentioned, good results have been accomplished. This is what has given the immense impetus to the quacks, and has caused them to use pastes, salves, etc., in the treatment of other malignant troubles.

In the case before us I believe satisfactory results could be obtained by the use of the actual cautery, as has been suggested. If, however, anything radical is undertaken, it should be nothing short of amputa-

tion. Metastases do not occur so readily in a growth of this kind as in other cancers, and unless extension through the lymphatic channels is already present I think it would be advisable to attempt to relieve the condition by some of the local measures mentioned, especially as I understand there are no lymphatic enlargements or infiltrations.

Dr. Ewing Marshall: When I took charge of this case the growth looked much worse than it does now. I made applications of antiphlogistine, changing the dressing each day; considerable of the outer surface of the ulcer came away with the first two or three applications of antiphlogistine, leaving it clear and with a healthier-looking appearance. It seems to be healing in places to a certain extent, and I had thought of following up the treatment by some of the cauterizing pastes, but it never occurred to me to use the actual cautery. I think this is a much better idea in the treatment of this case. The patient would not submit to an amputation, and it is of no use to advise such a measure.

Two Atypical Cases of Pneumonia. Dr. Ewing Marshall: I have recently seen two cases of pneumonia that have interested me a great deal, and they may be of interest to the Society. The first case was a young boy who was taken ill on Thursday, and another doctor was called to see him Thursday evening. The doctor thought at first that the trouble was a bilious attack, and gave him a thorough mercurial purge on Thursday, but the boy did not seem to be much improved on Friday and Saturday. He had a high temperature and a dry hacking cough, which came on in paroxysms. I was called to see him late Saturday afternoon. He complained of left-nipple pain, rather sharp in character, and from the high temperature and history of the case I thought it was pneumonia. I made a careful examination of the chest, but could discover no pneumonic signs.

I suggested antipyretic treatment for relief of the high temperature, put the boy to bed to give him a little rest, and the next day he had a brown expectoration; and the following day, late Monday afternoon, he had a profuse sweat and his temperature dropped to 99° F. He never had another marked rise of temperature after that, and went on to a good recovery.

Here was a case that went through the whole course of a pneumonia, and neither the other physician nor myself could discover any of the usual signs of pneumonia about the lung, and the only explanation of the occurrence to me was that it was a case of central pneumonia that

never extended, and why he should have had the nipple pain I do not know, because there was no involvement that we could discover of the pleuræ.

CASE 2. I was called about one o'clock one morning to see a man who had some marked discomfort in his side, with a history dating back for some time; there had been occasional coughs, he caught cold easily, and the family warned me before going upstairs that they were afraid the patient had some trouble with the lung, and had been considerably worried over it.

Upon examination I found in the right lung, low down, a marked failure of the respiratory murmur, as if there was some tubercular trouble with the spongy tissue of the lung. When I saw the patient in the afternoon of the following day I could hear a crepitant râle over this lung, not the distinct râle that we get in a marked case of croupous pneumonia, but something on the order of a pneumonic râle. His temperature range had also been high.

On the fifth day he had a profuse sweat, his temperature came down to normal, and he made a good recovery. He evidently had some slight involvement of the pleura.

Discussion. Dr. J. W. Irwin: For the last six or eight weeks we have had in Louisville some pretty sharp attacks of bronchial catarrh, mostly in persons predisposed to rheumatism, or having a rheumatic history antedating these attacks. The attacks came on in many cases much as Dr. Marshall has described, and in a few instances catarrhal pneumonia has supervened upon these attacks, especially in those who have not been careful in the early part of their illness. I have seen a number of cases of capillary bronchitis in adult persons. Furthermore, as Dr. Marshall has stated, they have complained of vague pains about the chest, not confined to the nipple, but in the right or left breast; pain occurred sometimes on both sides. It is not an uncommon thing to have neuralgia associated with these catarrhal affections, especially when it occurs in persons predisposed to rheumatism. In some cases I have seen considerable engorgement of the lungs associated with the symptoms he has described. There were evidences in the lung very much like the first stage of pneumonia, but in twenty-four to thirty-six hours the lung would clear up and nothing further than the evidences of a capillary bronchitis would remain.

I mention this because the temperature and other phenomena attending the disease did not correspond to that of croupous pneumonia,

and the engorgement occurred too soon in many of the cases to be a bronchial pneumonia, because the latter is more slowly developed.

I think the vague pains he has spoken of might be considered as neuralgic, depending upon the general systemic condition.

I think the bronchitis we have been seeing the last few weeks is a form of la grippe, as I have seen it affecting persons who were not exposed to cold at all, and four or five members of one family were sick with it at the same time. There was not the same amount of depression present as we have previously seen in la grippe. In some cases it has affected the mucous membranes of the stomach and intestines, as manifested by sharp attacks of diarrhea. A very troublesome cough has always attended these attacks, because of the capillary bronchial affection. I have seen no pleurisy attending it, but have in a number of instances observed the peculiar neuralgic pains spoken of about the chest, occurring just about as often on the right as on the left side, and in one case I was led to investigate more closely, expecting to find evidence of pleurisy; pain was confined mainly to the left side, in the place where we usually find evidences of pleurisy.

Dr. W. F. Boggess: I do not doubt that the first case Dr. Marshall has reported was one of what the text-books describe as abortive pneumonia. We do have cases of this disease occasionally, and I have seen several of them in my hospital experience, where in the beginning they give all the positive signs of pneumonia, even to the stage of almost complete consolidation, and within three or four days after the onset of the disease you will find the lungs have entirely cleared up, reaching the crisis in from three to four days after the initial chill. I have seen several such cases in the hospital, and there is no reason in the world to doubt that they were true cases of croupous pneumonia. In fact, in two of the cases I recall the interne was good enough to make a careful examination of the sputum, as was his custom in every case of pneumonia, and found an abundance of pneumococci.

The second case I would be inclined to regard as one of pleurisy of considerable intensity, possibly circumscribed, and the pleural infection by continuity of structure extended down into the trabeculæ between the air vesicles, giving the bloody sputum, slight dullness, and other symptoms simulating the second stage of pneumonia. I have sometimes seen this in the beginning of an acute pleurisy, especially those cases possibly due to the influenza bacillus, where I would defy the best diagnostician in the world to say whether there was a beginning

pneumonia or a pleurisy. There is the initial chill, high temperature, pain in the side, brick-dust sputum, and within twenty-four to forty-eight hours if you examine the chest you will find it filled with a pleuritic effusion. There is sufficient congestion in the periphery of the lung to produce discoloration of the sputum.

I do not know whether I understood Dr. Irwin to make a differential diagnosis between capillary bronchitis and catarrhal pneumonia. I have always looked upon this differentiation as requiring a most astute diagnostician, because in capillary bronchitis as a matter of course you have catarrhal pneumonia. In other words, it is impossible to have a catarrhal condition of the finer terminal bronchi without the development of a catarrhal condition of the air vesicles, and I think it would be a physical impossibility to make a differential diagnosis between the two.

In lieu of a written essay the following report of three interesting cases was made by Walter F. Boggess, M. D.:

I have had three rather interesting cases recently, and I thought it might be of interest to report them and that it might possibly elicit some discussion.

CASE I. The first case was a man, aged forty-two years, weighing about two hundred and forty pounds, lithemic in character, who, when he came to see me March 13, 1902, was complaining of vague renal pains. Upon examining his chest and looking him over thoroughly, I found that the left pleura was two-thirds full of fluid, he having given a suggestive history of an insidious pleurisy. In looking further into the case I examined his urine, and found the heaviest deposit of uric acid and urates that I have ever seen.

I put him on antilithemic treatment and diet and told him to go home and go to bed, recognizing the fact that in all cases of pleurisy the less exercise the patient takes the less the effusion and the better it is for the patient. He did not do this; being a fireman, he reported back to his station, and a night or two after that made a run; was exposed one of those cold, chilly nights, and the next day he went home feeling worse and sent for me about eleven o'clock, but I did not see him until five or six o'clock in the afternoon. When I saw him he was in the throes of a violent renal colic. He gave a positive history of the characteristic sudden beginning, with intense pain along the line of the ureter, retraction of the testicle, and all the symptoms coincident

with that disease. I asked him if he had passed any urine since the attack began, and he said he had not; so I catheterized the bladder and drew off about two ounces of urine, which was slightly bloody. I found him in rather a collapsed condition and gave hypodermics of strychnine and morphine, which controlled the pain somewhat.

I saw him early the next morning and again asked him if he had passed any urine, and he again said he had not; I used the catheter again and drew off about one ounce of urine, which was very bloody. That made, all told, from the time the attack began until the end of twenty-four hours, about three ounces of urine secreted by the kidneys, or at least which passed into the bladder.

The next day I had Dr. William Bailey see the patient in consultation with me. At eight o'clock the following night I found him in a still more collapsed condition, practically pulseless, suffering some little dyspnea, in rather a comatose condition; I again catheterized the bladder and withdrew possibly one half ounce of urine. He went along in that condition until three o'clock that morning, when he died, as I think, from anuria, a complete checking of the renal secretion by renal calculi.

The case is interesting in that I have no positive proof that he had a double calculus; in other words, that both ureters were blocked up by calculi. In this case it is an interesting matter to discuss why he should have had anuria in the opposite kidney if its ureter was not blocked. It is true we do see after extirpation of one kidney a checking of the urinary secretion in the opposite kidney, or after kidney operations this is frequently the cause of death. Then I have seen cases after surgical operations, whether due to shock or the anesthetic I can not say, where the patients died from anuria. I have seen a number of such cases.

Whether this condition was due to the shock of the intense pain that the man suffered for twelve or fifteen hours owing to the passage of the renal calculus, and the shock produced the anuria, I can not say.

I remember a similar case which occurred in my practice a number of years ago; I had Dr. Weidner and Dr. Bailey see the case in consultation with me. The condition in that case was very similar to the one just reported. The patient died of anuria, going four days without the excretion of any urine. The history of these cases of anuria usually is that they run from three to eleven days without the passage of a particle of urine.

In the case above mentioned we had the satisfaction of making a post-mortem examination and found the right kidney very much enlarged and cystic, and in the body of the kidney itself we found several large calculi; the onset of the trouble had been with the passage of a renal calculus down the right ureter. The left kidney did not seem to be diseased, either with an acute or a chronic nephritis, nor was there a calculus found in it. This case shows that the left kidney suffered from the shock of a calculus passing down the right ureter.

CASE 2. Last month I was consulted by a cigar-maker, thirty-eight years of age, who came to me for relief of a condition that had existed for five or six years or more. He at one time lived at Tampa, Fla., also at Key West, Fla., and worked at his trade in those localities, and during these six or more years it was not uncommon for him to have hematuria, lasting occasionally for weeks at a time. Whenever he caught the slightest cold, whenever he had the grip, or whenever there was any special indiscretion in the way of eating, drinking, or exposure, he would have hematuria. At these periods there was a slightly diminished quantity of urine, which presented more or less blood, without any special discomfort. He would continue at his work regardless of this condition.

During the past month I have made examinations of eight or ten specimens of his urine, and every one of them, with the exception of one week, showed the presence of blood. The man's weight is normal; if anything, he is perhaps fleshier than he has been for years. He is in normal strength and works daily at his trade, suffering very little discomfort except during an acute exacerbation, especially when he has taken cold or exposed himself unduly.

This case is interesting to me for many reasons: First, that I am unable to determine from whence this blood comes. Second, here is a man who has suffered almost constantly during the past six years with a condition which we were taught to look upon as alarming, a condition of hematuria, never losing more than a few days at a time from his work, never suffering much discomfort, not losing flesh nor strength, not losing his appetite, and showing practically no physical effects of this condition.

When I first saw him, and until I procured his history, I thought of a tuberculous kidney or bladder; but he gives absolutely no bladder symptoms; I examined his bladder for stone with negative results; his urine upon filtration shows no albumen, demonstrating that there can

not be much disease of the kidney, and the case is interesting in that it is so obscure.

CASE 3. The third case is also an extremely interesting one which I have seen within the last month or six weeks. The patient, a little colored girl eleven years of age, was brought to my clinic in the Kentucky School of Medicine to see if we could not do something to stop the flow of urine, as the step-mother said.

Upon thorough examination of the child and investigation of the history, I found that its mother died of tuberculosis, its father had syphilis at one time and is still living; that the child drinks, as the step-mother expressed it, each night a three-gallon pail of water and in addition a gallon bucket of water, making the total amount of liquid taken by this child during the night four gallons; and the step-mother states that it drinks nearly an equal quantity of water during the day, making a total of seven to nine gallons of water taken during the twenty-four hours. It passes during the twenty-four hours practically the same amount of water by the kidneys.

The child is well nourished, is bright and intelligent, goes to school daily, and shows practically no effects of this diseased condition; and does not look in its physiognomy, its skin, teeth, or mucous membranes like a syphilitic, or like a child with congenital syphilis, nor does it show any glandular enlargements that we would expect to find in a tuberculous child; the tonsils are normal and there are no adenoids present. This, as you are aware, is a typical case of diabetes insipidus in a child eleven years of age.

Diabetes insipidus, as you know, as a disease occurring during childhood is not rare; possibly twenty per cent, or one fifth, of all cases of diabetes insipidus reported occur in children under the age of ten years. It has been reported in a child as young as three years.

The only diseased condition or serious illness that this child has ever had was three years ago, when it had an attack of typhoid fever. About three months after convalescence was well established from typhoid fever it was noticed that the child began to drink more water than usual and pass large amounts of urine, and the condition has been going on ever since. The child eats moderately but not ravenously, as we find in diabetes mellitus.

The urine in the first specimen I examined showed specific gravity of .1000; the second specimen showed specific gravity of a little over .1001. The child was at once put upon appropriate treatment, and we

have had it under observation now nearly a month, and I am gratified to say that the amount of water taken in the twenty-four hours has been decreased about one and a half gallons and there has been nearly the same amount of decrease in the urine passed in the same length of time.

Now, these three cases present a syndrome of clinical symptoms, each case being an extremely interesting one to me, each presenting a rare condition, yet all showing a diseased condition of the kidneys, and I thought it possible that a report of these three cases might be of greater interest than any essay I could write.

Discussion. Dr. Ewing Marshall: In the first case reported I do not see why the question of surgery should not have been considered, inasmuch as there was anuria which lasted for forty-eight hours or longer. It is possible that a surgical operation might have been of benefit to the patient.

Dr. T. P. Satterwhite: All the cases reported by Dr. Boggess are extremely interesting. With especial reference to the second case: That a person should pass bloody urine for months or years constantly without any effect upon the physical condition or the general health of the person is unusual. It will be remembered that I reported a case to this Society not long ago, the patient being a robust-looking young lady aged nineteen years, who had been passing blood with her urine almost constantly for eight months, she being in Chicago for six months of that time under the care of Dr. Quine, who sent me analyses of her urine covering this period, and in every specimen there was more or less blood. After she came under my observation I examined numerous specimens of her urine, and in nearly all of them blood was found. She had a florid complexion, and was a typical healthy-looking young girl. There was no pain to indicate trouble with the bladder, and there was no symptom to indicate renal disease, nor did the microscope show anything abnormal.

All three of the cases reported are very obscure, and I am sorry that I can not throw any particular light upon them.

Dr. Irvin Abell: In regard to the second case, I would suggest that there possibly existed a papilloma in the bladder. If there is any one symptom which leads us to suspect a condition of this kind it is a symptomless hematuria. In a good percentage of cases we find that clinically these papillomata of the bladder have undergone malignant degen-

eration when the surgeon is consulted, and practically the majority of them are left to themselves until they have undergone that change. After removal they do not recur as papillomata, but as epitheliomata, in the majority of cases. Still it is possible that the patient Dr. Boggess has referred to may have had a small growth, mulberry size, near the ureteral orifice, which would have given the symptoms described. I think the bladder in this case should be carefully examined with the modern cystoscope, as in this we have the best means of determining whether or not there is a condition of the bladder to account for the hematuria. In these cases oftentimes we have a history of backache, particularly referred to the side upon which the growth occurs, although this symptom is not always present. When the growth occurs in the wall of the bladder, away from the ureteral orifices, there may be no symptoms present except slight hematuria.

Dr. Boggess' remarks concerning anuria are in accord with this process, as we understand it. As to the cases following surgical operations, I have had the pleasure of examining several of these cases post-mortem, and in one of them I had made three twenty-four hour collections of urine previous to operation, examination showing absolutely no evidence of renal lesion. The urine was normal; there were no renal derivatives, no albumen, and nothing that would indicate a renal lesion. This woman died of anuria, I believe, from the administration of ether, which was continued but sixty-five minutes. Removal and examination of the kidney post-mortem showed an acute cloudy swelling. Some German authority has made a number of experiments upon dogs after the use of ether anesthesia with similar results, and also reports a number of cases in his clinical work where examination previous to surgical operations has demonstrated that the kidneys were normal, yet after the administration of ether anesthesia a condition exactly similar to that which I have outlined was produced. This leads me to believe that it is the anesthetic rather than the shock which is responsible for the mischief. Where the operation is upon the kidney itself there may be some action through the sympathetic system to account for the condition.

Dr. W. F. Boggess: I am sorry that the members did not discuss my reports more fully, because I would be glad to hear from them along these lines. I am sure that many of you have had experience such as would be of help to me in some of the cases.

Dr. Abell's explanation of the lesion in the second case is one which never occurred to me; I was looking above the bladder—in the kidney—

for the explanation of the trouble. I can understand how a papilloma might exist in the bladder for some time, and from ulceration or congestion of the mucous membrane there might be an oozing, and we would of necessity have blood voided with the urine. If the man returns to me I shall have the cystoscope used to determine the exact condition of the interior of the bladder.

In regard to the case of anuria, the condition was similar to that which we see following surgical operations upon the kidney itself; that the passage of a stone through the ureter, with possibly an accumulation of calculi in the kidney, produced just such shock as we may have produced through the sympathetic system after a surgical operation upon the opposite kidney, thus causing the condition known as anuria. This is looked upon as one of the greatest dangers of operations upon the kidney. I believe it is one of the most frequent causes of death in such cases.

Intubation in Extremis from Diphtheria: Recovery. Dr. S. G. Dabney: The following case shows the difficulty that sometimes exists in differentiating between the last stage of asphyxiation and the last stage of exhaustion.

I was called to see a child one morning about 8 o'clock two weeks ago, the family physician telephoning that the child had diphtheria and needed intubation very badly. It was in the lower end of town, and I suppose I was an hour getting there. I found a little child seven years old, in bed and perfectly unconscious; eyes half closed, almost pulseless, and looking exactly like a moribund child. I thought it would die in a minute or two at the latest. I must say if I had seen the child as I saw it then without any history being given me, I would have felt inclined to let it alone, thinking it the most merciful and wise thing to do.

The doctor said, however, that not many hours before the child had been doing fairly well, that it had had diphtheria for three or four days, and that a few hours before breathing had become very difficult. The only effort at respiration that was now made was an occasional gasp, in which it would move its head slightly—such a gasp as we see in dying people, regardless of the cause of death.

I warned the father and the physician in attendance that I thought there was a very strong probability if we took the child up to insert a tube in its larynx it would die in its father's lap; he appreciated the

situation fully and left the matter entirely to me. I thought, with the history of the case before me, that intubation was the wise thing to do. We put the child in its father's lap and I inserted the tube; it went in without the least resistance, it being unnecessary to hold the arms or hands—the patient being like a cadaver. The child was then put back to bed, and I did not see any immediate revival; possibly air went into the lungs more easily, but efforts at respiration were very feeble. I suggested to the doctor that he give an hypodermic of strychnine; the child was seven years old, and I advised that it be given one-thirtieth grain of strychnine, corresponding to one-tenth grain in the adult. Unfortunately the doctor did not have his hypodermic syringe with him, and had to return to his office, two squares away, to get it. I did not believe at the time that the child would live until he could get back, and left in a few minutes expecting, of course, that the child would be dead before the doctor could return and administer the strychnine. However, I received a telephone message from him three or four hours later that the child had revived promptly and was doing well. He asked me to see the child with him again that afternoon at six o'clock, which I did, and found it breathing well and looking bright. I asked the physician if he gave the strychnine, and he said he had given it one-fifteenth of a grain hypodermatically. He said he had seen one case in which this amount had been taken accidentally by a child about this age, and it was followed by no toxic symptoms, and as strychnine was indicated in this case he proposed to give enough to do some good.

The family physician had given fifteen hundred units of antitoxin to this child the day before I saw it—of course much too small a dose—and he gave three thousand units more just after revival of the patient from the strychnine. The child made a perfect recovery.

The case is of interest as showing the difficulty that exists, in the very last stages, of differentiating a death from exhaustion and a death from suffocation. Of course, when the case is seen earlier the landmarks are all well defined. This child had passed the stage when the symptoms of asphyxiation existed. It was saved by intubation, strychnine, and antitoxin.

Discussion. Dr. Carl Weidner: Dr. Dabney is an experienced specialist, and has made us an extremely interesting report. We know that it is sometimes difficult to recognize the mode of death under the circumstances he has outlined, whether exhaustion or asphyxiation.

In either event, however, a dose of strychnine was indicated, and with the child in the condition stated it is doubtful if any effect would have been noted had not a very large dose been administered, capable of arousing the extremely depressed nervous energy. I would be inclined to attribute the beneficial effect to this large dose of strychnine.

Dr. W. F. Boggess: I have had several cases which were in extremis at the time I first saw them, where it was thought intubation would not be of any benefit, but good results followed this procedure. Intubation in conjunction with the strychnine undoubtedly saved this child's life. We have all heard Dr. Cheatham, Dr. Dabney, and others who are working in their line tell about the enormous doses of strychnine which they give in cases of optic neuritis. If we want to get the full physiological effect of strychnine it has to be given in large doses. I have reported one case where I gave a patient one-seventh grain of strychnine within twenty minutes; I gave her four doses of one-thirtieth grain each, making practically one-seventh of a grain in all.

Dr. J. M. Krim: It would appear to me that while both intubation and strychnine were indicated in the case reported by Dr. Dabney, it would also have been well to have given oxygen, in accordance with the modern methods now in use. I would like to ask the doctor in closing to tell us whether oxygen was administered, and if not whether he thinks it would be indicated in a case of this kind.

Dr. S. G. Dabney: In answer to Dr. Krim: Oxygen may be indicated in a case of this kind, and would probably act beneficially, but this was a child of poor people, living near the edge of the city, and the probabilities are that the necessary apparatus for administering oxygen could not have been obtained in that part of town, and I am sure the child would have died before it could have been secured. In any event, the results prove the wisdom of the treatment which was employed.

Preliminary Report of a Case of Graves' Disease: Dr. Carl Weidner: I wish to make a preliminary report upon a case which I shall report on at length at some future time. It is a case of Graves' disease in a young girl, eighteen years of age, which manifested some very unusual conditions. There has been the most extreme tachycardiac heart that I have ever seen, great irregularity at times, the pulse being one hundred and seventy, but still countable. I have usually found great difficulty in counting a pulse of that rapidity, but in this case I could count it without difficulty. The pulse would

remain this way for perhaps three or four days, when under the constant administration of the strongest heart stimulants known it went down to one hundred and sixty, one hundred and fifty, one hundred and forty and to one hundred and thirty at the last observation I made.

The next point of interest is that the girl positively and absolutely refuses all food; I have not been to see her for several days, expecting to hear at any time of her death, and the parents do not expect anything else than her early demise. By positive counting of days, the girl has taken no food for twenty-one days except one third of a glass of milk, which was promptly vomited, and also excepting some ice and a few spoonfuls of beer. She can not get out of bed; she is too weak to stand up; her mother remains with her at night, so there can be no deception. I do not know whether she has taken any food since I last saw her, but the last time I saw her she had taken no food for twenty-one days. Her mind has been perfectly clear all the time. Emaciation and debility are extreme.

She has moderate exophthalmus, she has the enlarged thyroid, she has marked disturbance of the heart, and all the other phenomena usually seen in Graves' disease. The parents say she has been a strangely nervous girl for several years.

Discussion. Dr. J. W. Irwin: This is an interesting case. We have records in history of several fasting girls; one lived for seventeen months, taking food about once every seven weeks, and then but a small quantity.

The most famous fasting girl of whom we have a record is the "Irish fasting girl." She lived six years; she would sleep for six weeks, then wake, take one meal, and go to sleep again. The strange thing about the case was that the girl during these six years did not lose a pound in weight.

In all such cases there is a strong neuropathic history. In the case reported by Dr. Weidner the tachycardia is good evidence that there must have been a neurosis associated with the disease, and I am not so certain that most all of these cases of Graves' disease are not in some way engrafted upon the nervous disease.

The first report of a case of Graves' disease was made by Marsh, of Dublin, in 1835; he reported the peculiar rapid action of the heart, and that after the pulse-rate passed one hundred and seventy to the minute it was almost impossible to keep a correct record, although he had reason to believe that in some of his three cases the heart beat at the rate of over two hundred pulsations to the minute.

Graves came after him in 1842 and reported the results of autopsies made upon persons who had died of the disease, relating the triad of symptoms—exophthalmus, enlarged thyroid gland, and rapid heart action. He showed that the rapid heart action was not continuous, that it occurred in paroxysms lasting from two to six hours, then there would be intervals of rest lasting from half an hour to two hours.

Basedow and others reported similar cases about the same time, and they showed that the digestive organs were greatly disordered, and that in most of the cases there was a strong neuropathic history. There was not quite as much known about the effect of nervous heredity in those days as we know now.

Cases of tachycardia such as Dr. Weidner has spoken of are apt to be rapidly fatal, especially when the disorder occurs in the male. A large percentage of cases of violent tachycardia end their lives in insane asylums. This is one of the causes of insanity in the male or female, and preceding the insanity they will absolutely refuse to take food. A notable case of this kind occurred in this city, the sister of a prominent physician. She had been under my care for two years or longer; she had violent tachycardia at times; I could not count the pulsations. She did not have much exophthalmus, but she had an enlarged thyroid gland, tachycardia, and all the other characteristic symptoms of Graves' disease. She had the symptom Dr. Weidner has described, anorexia, which was complete; any attempt to take food caused vomiting; a swallow of water would cause vomiting; this would last for days at a time. I had her carefully watched; she did not even drink water, she took nothing in the way of food or drink. One day she attempted to throw her child out the second-story window; a minister living next door rushed in and saved the child.

I found associated with the tachycardia, after it had continued for about three years, distinct evidence of structural change in the walls of the heart, and also mitral stenosis, and thought she would soon die from this cause. We finally had her mental condition inquired into and she was committed to an insane asylum.

Not long afterward, a Louisville physician's wife interested herself in the case, enlisting the sympathies of a prominent judge of a local court and of a physician who was at that time regarded as a prominent nerve specialist. They succeeded in getting her out of the asylum upon the sworn statement of the physician to the effect that there was nothing the matter with the woman which he could not cure in a short time; that she was perfectly sane. She was released from the asylum and

restored to her normal status; one morning, before I had gotten out of bed, I was called to see her in a great hurry, but before I reached the house she was dead.

Here is the history of a case of tachycardia upon which was engrafted mitral stenosis, with structural change in the ventricle of the heart. I mention this case to show that where violent tachycardia exists it is often difficult to detect heart changes. Where tachycardia is great, where the pulsations are so frequent, it is almost impossible to detect these changes unless one has a very acute and well-trained ear. In Dr. Weidner's case it would not surprise me to hear of the girl suddenly dropping dead, if indeed she is not already dead.

P. F. BARBOUR, M. D., *Secretary.*

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, April 22, 1902, the Vice-President, Irvin Abell, M. D., in the Chair.

Hypertrophic Fibrosis of the Pylorus. Dr. J. W. Irwin: This patient, Mr. C. H. F., of Lawrenceburg, Kentucky, was referred to me by Dr. Paynter, of that place, and after a cursory examination I thought the case of sufficient interest to bring before the Society. I am not through investigating the case, nevertheless I thought it worth while to bring the patient before you to get your opinion and advice touching the diagnosis and treatment.

Mr. F. is twenty-nine years of age; by occupation he was for a time a policeman; lately he has not been doing anything. The history is that he has been sick for six years. For the last eighteen months he has been continuously unwell, and in the last six weeks he has had persistent vomiting of food. After eating a meal it would remain in his stomach for a few hours, it may be until the next meal time, then he would vomit, some of the food being practically unchanged. He has had some pain in the epigastric region, mostly referred to the right side. He has lost thirty pounds in weight within the last eighteen months.

The family history goes to show that there is no hereditary predisposition to cancer, to tumor, to anything pointing to nervous disease, or to consumption.

I made a casual examination of his urine and found it was quite within the healthy limit, though I was not satisfied as to everything it contained, and asked for another specimen.

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

The gentleman informs me also that when he eats solid food it remains in the stomach unchanged, and it is very much in the same state when vomited except that it is intensely sour. The stomach becomes greatly distended after taking food, and after this distension occurs he vomits all the food taken. His bowels are at times constipated, at other times relaxed; the evacuations are not very copious at any time. He also states that large quantities of mucus are noted in both his stools and the matter vomited, but there has not been any clear blood at any time.

This is briefly the personal and family history of the case. I will ask those of you who are interested to examine the patient and ask any questions that may occur to you.

Discussion. Dr. T. P. Satterwhite: In my opinion this is a case of so-called nervous dyspepsia. There is no induration that I can feel at the pyloric end of the stomach, which would be present if he had any trouble in that region. He has been practically an invalid for five or six years; he has a nervous temperament, and his vomiting would indicate a dyspeptic condition such as we frequently see. Without a chemical examination of the vomitus, and without any further knowledge of the case than that afforded by the superficial examination I made and the symptoms already detailed, I would be inclined to think that the trouble is what I have stated.

Dr. F. W. Samuel: I am sure that Dr. Irwin presents the case not because he has arrived at a positive diagnosis, and there is not much that can be said about the case until the vomitus has been carefully analyzed. As Dr. Satterwhite says, it is possible that the nervous condition present may have produced the dyspeptic symptoms. It may have been in the beginning an ordinary indigestion. I find the stomach very much distended with gas; whether there is a permanent enlargement of the stomach or not I am not able to say. I really can not state what is the matter with this man, in the absence of a thorough analysis of his urine and the vomitus. It may be a case of chronic dilatation, the result of stenosis.

Dr. Ewing Marshall: I find there is considerable distension of the superficial veins about the trunk, and I was impressed in the examination that I made of this man that the liver was somewhat contracted. It may be that there has been or is some trouble in the liver that is interfering with digestion in the upper bowel, and this might also account for the flatulency of which he constantly complains.

Dr. M. F. Coomes: I do not believe there is any trouble with the liver in this case; the whole trouble is in the stomach. I would not like to say positively what is the matter with this man without a careful examination of the stomach contents.

Dr. J. M. Krim: I believe the trouble is due entirely to a gastric condition. The stomach is enlarged and there is evidently some erosion of the mucous membrane, possibly an ulceration, which accounts for the dark, grumous looking material which he says he vomits. It is hard to tell without a careful examination whether it is blood or particles of food, as he says he vomits food undigested shortly after eating. I believe it is an enlarged condition of the stomach, with ulceration.

Dr. M. K. Allen: There is certainly an enlargement of the stomach, with some ulceration, or the condition may be one of malignancy. This is my judgment. Of course, the diagnosis has not yet been made, even by the gentleman who presented the patient.

Dr. J. W. Irwin: Here is a man twenty-nine years of age, whose occupation has never been a severe one; he has always been temperate in his habits; he has never been a drinker; occasionally he has taken a drink, and once or twice in his life he has been slightly intoxicated, but he is not a drunkard, nor has he ever been a steady drinker. Six years ago he began suffering with some stomach trouble, and at times he vomited his food. His bowels have been constipated most of the time; now and then they acted pretty regularly, without any material change in the color or consistence of the evacuations. Within the last eighteen months he has had almost continuous pain in the epigastric region, extending around to his side, to the right or to the left, and within the last six weeks he has vomited almost everything he has eaten. Now and then he would retain a meal or two meals; perhaps he would not vomit for a day or two, but by the time the next meal arrived he would vomit his food almost unchanged, except in this regard, that the contents of the stomach would smell very sour and offensive. Lately he has been vomiting a dark-brownish material, mixed with a large quantity of mucus. He has had almost continuous pain. In the last eighteen months he has lost thirty pounds, the most of which has been lost within the last six weeks.

This is briefly the history of the case. In examining him to-day I also made a casual examination of his urine and found the specific gravity .1024, dark in color, no albumen and no sugar. I did not inves-

tigate it further. He feels very uncomfortable after drinking water, also after taking food, solid or liquid; when he eats small quantities of solid food he has less pain immediately afterward than when he takes fluids; anything that tends to distend the stomach increases his discomfort, but he has more or less continuous pain in the stomach.

There is an enlargement at the pyloric end of the stomach and dullness on percussion in that region; palpation and percussion show the stomach to extend down fully to the umbilicus. At the time I saw him to-day he had not taken his midday meal, though he was then suffering from the effect of his morning meal. The cardiac end of the stomach was very much dilated; lying on his back it puffed out and showed on the surface as a round, perceptible tumor, and on percussion showed evidence of gas in great quantity. He eructates a large quantity of gas at times, and occasionally there is thrown up with this gas sour water.

These are briefly the conditions with which we have to deal in this case. We have here an enlargement at the pyloric end of the stomach, and the question in my mind is as to the character of this enlargement, whether it is an enlarged gall bladder pressing upon the pyloric end of the stomach or whether it is a tumor or thickening of the pyloric end of the stomach; the rest of the stomach walls show no evidence of hypertrophy. These are the questions that have occurred to me. Upon close investigation I find that the enlargement is a little too high up for the gall-bladder, that it does not correspond in outline to that viscus, and that it is too hard for the gall-bladder, especially in view of the fact that it is smooth under palpation. There is no evidence of nodulation, no roughness, no evidence of the presence of gall stones on palpation.

We have here a case of disorder of some kind about the pyloric end of the stomach, and I have come to the conclusion that he has that peculiar condition known as hypertrophic fibrosis of the pylorus. It is not as yet, to my mind, a malignant disorder, but the great majority of these cases of fibrosis have a tendency to malignancy. There is no history of cancer in this man's family, nor has he a neuropathic history. There is no history of consumption or of tumor preceding this case, consequently we must conclude that he has suffered for some time from gastritis, perhaps chronic gastritis, which may have caused an ulcer of the pylorus, and this ulcer may have given rise to the thickening which has partially closed the pyloric orifice. Because of

this partial closure of the pyloric end of the stomach fermentation of food takes place in the stomach, and the only way he can get rid of the contents of the stomach is by vomiting. I do not believe that the nervous element in this case has anything to do with his trouble. It is only a coincidence, or it may have been acquired owing to the fact that he has suffered from this trouble for so long a time.

There has been no elevation of temperature—in fact, his temperature is one half degree below normal, but this is what we would naturally expect, owing to the fact that his nutrition has been so much impaired within the last six weeks.

I shall proceed to examine the contents of the stomach, and also make use of the test-meal, and make such other investigations of the case as I think proper in order to arrive at an accurate conclusion in the case. I shall also have the urine more carefully examined to find out just what, if anything, abnormal it contains, and at a subsequent meeting I hope to lay the facts before you in order to make the diagnosis more clear.

Secondary Amputation: Sarcoma of the Radius. Dr. F. W. Samuel : This specimen is part of the tibia, showing typical osteoporosis, from a secondary operation performed upon the patient exhibited to this society by Dr. Ewing Marshall about a month ago. You will remember the discussion which took place at that time. One week after that, which will be two weeks ago to-morrow, I amputated the boy's leg above the knee. It will be remembered that the consensus of opinion when the patient was before the Society was that there was beginning bone disease in the stump, although many members differed on that point. After the amputation I opened the stump and found an abscess behind the tibia. It had invaded the bony structures, showing a characteristic osteoporosis, the cortical portion of the bone having become exceedingly thin. By examining the end of the tibia it will be seen that following Dr. Marshall's amputation, which was done because of a crushing injury, there was only a partial attempt at repair of the bony structures. When the boy was before the Society there was considerable swelling and the stump was tender and painful. There was evidently at that time some disintegration of the bone, and secondary amputation became an absolute necessity. I advised that this be done at the time he was exhibited, and as he had no money Dr. Marshall sent him to my clinic at the Kentucky School of Medicine, where the operation was performed two weeks ago.

CASE 2. This is a section of the arm from an amputation above the elbow because of an extensive sarcoma growing from the radius. It is the second case of the kind I have seen within the last twelve months. A young man from the eastern portion of the State came to me with a swelling of the forearm, which proved to be a sub-periosteal sarcoma, a secondary growth, which, of course, was non-encapsulated. This man had been operated upon a few months ago by a doctor in that neighborhood, who dissected out a sarcoma, which from his description was encapsulated, and in doing so he injured the brachial artery near its bifurcation just at the bend of the elbow, and hemorrhage was so great that he had to ligate the artery, which was done high up, near the beginning of the axillary space. Why it was necessary to tie this artery so high up I do not know. All of the growth was shelled out, according to the history, but it soon recurred, growing very rapidly. When he came to me the tumor was quite large, and I told him it was impossible for me to do anything in the way of excision, because I thought the bone was extensively involved, but it proved to be a sub-periosteal growth. I made no attempt to save the arm, because I felt that I could not do so in justice to the patient.

In the other case, operated upon three months ago, I found the radius was disintegrated to such extent that it appeared like a tuberculous process, with the osteoporotic processes going along with the softening.

Discussion. Dr. J. M. Krim: All I have to say about this case is that I think the growth will recur somewhere in the body. I have never seen a sarcoma of this kind which did not recur. It may not return in the stump, but within a year you will find that this man will have sarcomatous developments somewhere in the body.

Dr. Irvin Abell: The osteoporosis in the first case was evidently due to secondary infection, which is not infrequently observed in stumps where amputation has been done for a process primarily due to an infection. Involvement of the medullary canal is the primary starting point, then spreading through until we find the cancerous structure reduced to a mere shell, as in this case. Of course the treatment employed is the only one to be thought of. Amputation should be made high enough to be sure that you have gotten well beyond diseased structures.

The malignant growth is a case of considerable interest, and it always remains a question in this character of cases, particularly the

soft variety of sarcomata which take their origin from the periosteum, as to what will be the ultimate outcome. As this was a secondary growth, I take it the prognosis is rather unfavorable.

Dr. F. W. Samuel: The blood-vessels coursing through the sarcoma of the arm were very large and numerous. Where the sarcoma involves the bone, excision by the most radical method is to be advised if we are to expect any permanent results; the entire bone should be removed. However, if one would read what Wyeth has lately written upon this subject, his views might be changed; he does not believe that any of these cases are cured except by the injection of Coley's fluid. I have used Coley's fluid in three or four instances, in conjunction with some of my medical friends, without any benefit whatever.

In regard to the secondary amputation: This patient's leg was originally amputated below the knee by Dr. Marshall for a crushing injury, in which there was extensive injury to the bone; undoubtedly infection occurred at that time, as the wound was nine months in healing. The patient wore an artificial limb for a time, but its use became impossible because of swelling and tenderness of the stump.

I have amputated in a number of instances for tubercular processes, where the medullary canal was involved and was thoroughly curetted for some distance and drainage instituted, resulting in a perfect stump. I spoke to Roswell Park on the subject some time ago, and he said that he had practiced this method for several years with considerable success, and did not know why the procedure was not mentioned in text-books. I have always used in these cases a considerable quantity of iodoform gauze, with the idea that it had some inhibiting effect upon the tubercular process, at least upon the germ itself, and have had the best results.

Had this patient's limb been amputated originally above the knee, of course secondary amputation would not have been necessary. Prosthetic science has taught us that there is no necessity of attempting to save small portions of bone if proper adjustment of an artificial limb is to be made, especially when we get near a joint.

The essay of the evening, "Pernicious Vomiting of Pregnancy," was read by J. M. Krim, M. D. [See p. 441.]

Discussion. Dr. M. K. Allen: I remember to have had but one case of the kind mentioned by Dr. Krim; abortion was suggested, and Dr.

W. O. Roberts was called in consultation. The family would not consent to the induction of premature labor, and the woman died of absolute starvation.

Dr. J. W. Irwin: Dr. Krim has certainly reported three remarkable cases, especially the last one. I do not quite indorse his title of hyperemesis. I believe pernicious vomiting of pregnancy better expresses the meaning which it is intended to convey. Hyperemesis necessarily presupposes that there must be a certain amount of emesis during pregnancy. I therefore differ with him in regard to the title of his paper; these are cases of pernicious vomiting of pregnancy, and not hyperemesis.

I have never seen a case die from pernicious vomiting attending pregnancy, although I have met with a good many. I have been led to believe that the pregnancy always takes place very low down in the uterus in these cases; that pressure, as a rule, was exerted on the neck at or near the internal os, and from that source a great amount of irritation sprang, giving rise to the peculiar reflex vomiting. In every case where there were evidences of kidney complications I have found pernicious vomiting, but I have never done or advised that abortion should be done for its relief. In most of these cases of pernicious vomiting I obtained for the patient great relief by painting the external os and cervix with tincture of iodine and carbolic acid. Immediate relief almost always followed this application.

I have found another thing in connection with pernicious vomiting of pregnancy: All the cases I have seen, perhaps not exceeding eight or ten, were possessed of a neuropathic history. In one or two cases there were previous ulcerations about the neck of the uterus, and there was no question as to its having existed before pregnancy occurred.

I have tried ingluvin, but found that very few patients could retain it. I found that so far as remedies given by the mouth are concerned they were of very little value. Hypodermatically, morphine and cocaine combined afforded a great deal of relief. I usually give one fourth grain of morphine and one half grain of cocaine. These patients require large doses of anodynes to overcome the reflex irritation. I always put the patient on a light diet, of liquid food principally, and have succeeded in carrying all of them through to term and they have all been delivered of living children, although the women themselves were sometimes very much reduced in general health during the period of utero-gestation.

I have never met with such a case as Dr. Krim recorded, where there was a twin pregnancy, one fetus coming away while the other was retained, and the woman going on to full term. This case is worth recording, as certainly it is an uncommon occurrence.

Dr. T. P. Satterwhite: It has been my fortune to see several cases of pernicious vomiting of pregnancy commencing early. There is but one method of which I have knowledge that has done any good in these cases, and that does not always succeed, that is, dilatation of the cervix. I have always supposed this reflex vomiting of pregnancy was due to the fact that the fetal attachments were very low down in the uterus. In every case that I have seen, probably four in number, vomiting has ceased and the patients have gotten well after premature labor was instituted. This has so impressed me that where pernicious vomiting is making a decided impression upon the nutrition of the mother I always recommend premature labor.

Dr. Ewing Marshall: First, I would like to say that I do not believe painting the cervix with iodine or carbolic acid would have any influence whatever in controlling the effects of the child in utero. I have not been so unfortunate as to meet with any cases such as Dr. Krim reports. I have had some cases of severe vomiting, but they have generally been controlled. I want to go on record as concurring most heartily in Dr. Krim's practice; if I had a case where pernicious vomiting was exhausting the patient, I would not hesitate to advise the removal of the fetus.

Dr. W. F. Boggess: Unlike Dr. Satterwhite, I would not regard having seen cases of this kind as a "fortunate occurrence"; he said that he had been fortunate in having seen several cases of pernicious vomiting. I have been so unfortunate as to have seen three or four such cases. One patient died; another was saved by the induction of an abortion. The third case was rather interesting, and I will report it briefly: The patient was brought over here by some of her relatives from New Albany, Ind., after having been treated for some time by two doctors there. She was in an extreme state of emaciation, rapid and feeble pulse. She was brought to see me, and I wrote her some prescriptions, and as I was going out of town that night to be gone a day or two, told her I would see her as soon as I returned. After I had written the prescriptions I said to the woman that I supposed she had taken everything that had ever been recommended for relief of the vomiting, but asked if she had tried the old domestic remedy, parched

horse-corn. Upon returning to the city three days later, I went to see this patient and found her sitting up, bright and cheerful, and I immediately congratulated her upon the brilliant effect of my medicines. She then stated that she had never had the prescriptions filled, but had taken the domestic remedy that I had advised, viz., parched horse-corn, and it had produced complete relief.

In cases of pernicious vomiting of pregnancy, where the patient is rapidly becoming exhausted, with a pulse running from 120 to 130 to the minute, with progressive emaciation, I would not hesitate to advise premature labor; I think this is most excellent practice.

Dr. Carl Weidner: In twenty years' practice I never encountered such a case as reported by Dr. Krim until within the last three years, since which time I have seen three.

The last case he has reported is one of unusual interest, and ought to be put upon record more fully. It is certainly unusual to see one fetus expelled at four months and another carried to full term, which of course means that there was a twin pregnancy, with two placentæ.

In the other cases reported Dr. Krim has stated my opinion fully, and I concur heartily in the practice he has advised. In the cases I have seen everything generally recommended in text-books and otherwise was tried in our efforts to control the vomiting, without success. We elevated the foot of the bed, applied nitrate of silver and iodine to the cervix, etc., tried ingluvin, pepsin, and other remedies by the mouth, without any benefit. In two of the cases the patients were in imminent danger, the pulse was rapid and feeble, there was slight elevation of temperature, great emaciation, and abortion was decided upon. This is the only curative measure of which I have knowledge, and we are justified in resorting to it in these extreme cases. In none of the cases I have seen was there any uremic or other condition to account for the vomiting.

Dr. J. M. Krim: I did not have time in preparing my paper to work out the etiology of pernicious vomiting of pregnancy, and consequently said nothing on that subject, hoping it would be brought out in the discussion.

I will assure you that everything in the materia medica that has ever been recommended for the relief of the vomiting of pregnancy was tried in these cases. Not only this, but every domestic remedy suggested by the "old women" of the neighborhood was also brought into requisition without any appreciable beneficial effect. I submitted

willingly and cheerfully to the suggestions of the women folk in the neighborhood, and everything they suggested was tried in these cases. Many things unheard of in the medical profession, known to the laity, handed down to them as heirlooms of superstition and empiricism, were brought into service, without avail. Nothing could stop the vomiting.

The most important question that arises in these cases is, when should abortion be done? DuBois, I believe, has laid down the rule that when everything has been tried that is indicated, and all means have failed, then abortion should be resorted to. How soon this should be done is the question; if we wait until the patient is exhausted, with little vitality left to draw from, there is extreme danger in bringing on premature labor. It stands to reason that, with constant retching and vomiting and rapid pulse, the patient becomes so reduced physically that she is unable to withstand the ordeal of an abortion. I think we should resort to this measure much earlier in some cases than has been our practice. No absolute rule can be laid down to govern our action in these cases, and it becomes a matter of the best judgment of the physician in attendance.

Dislocation and Fracture of the Shoulder. Dr. T. P. Satterwhite: Five weeks ago I was called to see a case of fracture of the shoulder joint, and the surgical neck of the humerus was dislocated into the axilla at the same time.

The important question at this time is—it has now been five weeks that the dislocation has been in the axilla; there is union of the shaft—would it be safe at this time to attempt reduction of the dislocation? Shall I wait longer, or leave the arm in its present position, with a false joint, or should the joint be opened and replaced? The patient is a man thirty-eight years of age. Under chloroform the arm can be moved in all directions. The dislocation is underneath the glenoid cavity.

Discussion. Dr. F. W. Samuel: Shoulder-joint dislocations are not regarded as absolutely irreducible after the expiration of five weeks. I have reduced three (anterior) dislocations after two weeks by the Kocher method without much trouble. I believe the dislocation in this case ought to be reduced. If this can not be accomplished by intelligent manipulation under chloroform, the proper procedure would be to cut down upon it, when it could probably be reduced without

trouble. Dislocations of the shoulder joint are not hard to reduce when seen at the end of a few hours, but of course after four or five weeks, where much force has to be used, care and judgment must be exercised to prevent tearing the arteries and nerve structures, due to adhesions. Of course the conditions in this particular case may be different from the rule, but my judgment is that the dislocation ought to be promptly reduced, for the interests of all concerned.

Dr. Ewing Marshall: I concur in the remarks made by Dr. Samuel. This dislocation ought to be reduced at the earliest possible moment, as every day's delay makes the condition that much more serious. I believe it is possible to reduce most dislocations of the shoulder joint at the end of four or five weeks, but after this time it is attended by considerable risk.

Dr. T. P. Satterwhite: I consulted Dennis with regard to this case, and he is rather disinclined to attempt reduction of shoulder-joint dislocation after the expiration of two weeks, and this statement did not contemplate a case in which there had been a fracture originally. He says that under no circumstances should extension or traction of more than four hundred pounds be resorted to in trying to reduce a dislocation, and then with an instrument to record the actual force applied. I can not conceive that you could put four hundred pounds traction on that arm, five weeks after it has been fractured, without doing some injury.

My idea in this case is to let the man alone. He is an engineer, and says that his right arm (the one which is the seat of the fracture and dislocation) is not the one with which he regulates the throttle—that he regulates his engine entirely with his left hand.

I shall be very glad to take the patient to Dr. Samuel and have him make an effort to reduce the dislocation after the method he has mentioned.

P. F. BARBOUR, M. D., *Secretary.*

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SARATOGA MEETING OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

While the 1902 meeting of the Association of American Medical Colleges at Saratoga did not make any radical changes in the requirements for admission to schools, or in an advanced curriculum, there was abundant evidence that at the next meeting advanced requirements in both particulars will be earnestly insisted upon by all the best schools of the Association, and schools that expect to be recognized by State examining boards can not afford to oppose these measures.

The Association adhered to its previous requirements of giving no student credit for work done or giving advanced standing except upon rigid examinations. This should be insisted upon by all State examining boards, for otherwise evidence of higher medical education will be wanting. It is absurd for any one to claim that a student should be given advanced standing, or allowed to pass from one school to another in advanced standing, without having been thoroughly examined by the school in which he received his previous instruction. The practice of giving students credit for attendance upon a course of lectures who have never been examined is obsolete, and in our four years' graded system can not be tolerated. We must adhere to university principles, and never allow a student to pass from one year to another until he has passed satisfactory examinations, except he may

be conditioned in one or two branches, which may be disposed of at the beginning of the next year.

The President of the Association, Dean Vaughn, of the University of Michigan, made timely recommendations for changes in the constitution and by-laws that will elevate the standard of medical education both as to requirements for admission and the curriculum, and also called attention to the pernicious practice of some schools in not conforming to their advertised requirements and in trying to induce students to attend their sessions by offering reduction of fees and other irregular and disreputable inducements.

A committee composed of Dr. Ritchie, dean of the medical department of the University of Minnesota; Dr. Wathen, dean of the Kentucky School of Medicine, and Dr. Dodson, dean of Rush Medical College, was appointed to report at the next meeting of the Association upon the recommendations in the President's Address, and any other reforms they deem in the interest of medical education. A better committee could not have been appointed to do this work, for each of these gentlemen is thoroughly acquainted with the best methods conducive to higher medical education and the honorable relations between medical colleges, and represent schools that will sustain them in any laudable effort in that direction. It can be clearly seen that the Association and State examining boards will but little longer recognize schools that do not literally adhere to the requirements of the Association and the advertised requirements in their catalogues, or such schools as allow students credit for a course of lectures who have attended but part of the same and who have not been examined for advanced standing, or schools that advertise one schedule of fees and then try to induce students to attend by making liberal reductions or issuing scholarships. These schools are disreputable, and should not be recognized; but the most disreputable school is the one that offers a reduction of fees to induce students to leave another school, such practice being no better than a moral theft.

Current Surgical and Medical Selections.

PREGNANCY COMPLICATED BY TUMORS.—(Cumston, C. G., *American Gynecological and Obstetrical Journal*.) When pregnancy occurs in a uterus which is the seat of a fibroid growth, abortion usually occurs, set up by hemorrhage which is the result of the pathological condition of the endometrium, or by inability of the uterus to properly increase in size.

Where, in addition to the presence of the tumor, the uterus is retroverted, both mother and child are placed in imminent danger at the time of labor on account of transverse presentation occurring or of actual blocking of the passage by the growth. Another instance of the danger caused by these tumors is where a large one fills the abdominal cavity and is pushed up against the diaphragm by the enlarging uterus, thus producing compression of the abdominal viscera. Delivery in such a case is apt to be followed by dangerous hemorrhage or suppuration.

Treatment resolves itself into (1) induction of premature labor; (2) enucleation of the growth per vaginam or through the abdomen during pregnancy; (3) Porro's operation and total extirpation of the gravid uterus. Of these methods of treatment, Cumston disapproves of the first in any case. Where the fibroid is a polypoid of the cervix, it may be removed during the progress of gestation, but where the growth is of the subserous variety no general rule can be laid down in regard to treatment, each case being a law unto itself. The choice of total hysterectomy should be made in preference to supravaginal amputation in two cases, first where the fibroid growth affects the cervix, and second, where there is a septic process going on in the uterus. The presence of a fibroid during the puerperium increases the danger of hemorrhage, necrosis, or suppuration.—*Montreal Medical Journal*.

Special Notice.

I AM not in the habit of writing promiscuously of the virtues of medicine, but when I have used a remedy for many years with uniform success I feel that it is not out of place to give the remedy my commendation. I have been engaged in the practice of medicine here for many years, and the diseases which I am called upon to treat are mostly of malarial origin. Under such circumstances I am required to have a positive and efficient tonic for the hepatic organs. It is very difficult for me to get along without that tried and true remedy for the above conditions, Chionia. I frequently use it alone, and at other times in combination with other indicated remedies. I find it a real tonic for liver troubles, and not a mere stimulant; that its administration promotes digestion and supplies the exhausted and run-down liver with new energy. Another great advantage is that it has no depressing effects, which ordinary purgatives possess.

L. WILLIAMS, M. D.

Yorcktown, Ark.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

DIETETICS.*

BY M. F. COOMES, A. M., M. D.

Professor of Physiology, Ophthalmology, Otology, and Laryngology in the Kentucky School of Medicine; a Member of the American Medical Association, the Kentucky State Medical Society, and the Louisville Clinical Society; Ophthalmic Surgeon to Louisville City Hospital and the Kentucky School of Medicine Hospital; Consulting Ophthalmic Surgeon to Sts. Mary and Elizabeth Hospital, etc.

Dietetics is by all odds the most important subject to be considered in connection with our existence, as food is a necessity in order that life may be maintained and that the various organs of the body may properly functuate. It is taken into the body for two purposes, one to appease the pain of hunger and the other for the purpose of sustaining the body.

The next most important question to be considered is the food itself. From a physiological standpoint food-stuffs, including water, is reduced to four things, namely, water, sugar, albumen, and fat. By far the most important of this group is water, for the reason that more than seventy per cent of the body is made up of water, and that the great bulk of our nutriment is found in this seemingly bland, innocuous, inert substance, which as you know is composed of two simple gases. For the average individual it is necessary that he should consume between three and one half and five pints of water in twenty-four hours. Water serves a quadruple purpose. First, it relieves the pain of thirst; second, it maintains the equilibrium of the volume of blood contained in the vessels; third, all nutritious substances that are assimilable are of necessity combined with water in one

*Read before the Louisville Clinical Society, May 13, 1902. For discussion see p. 20.

way or another, and fourth, the whole process of elimination of the waste materials of the body is through the medium of water; that is, water is essential to this elimination even by expiration. Water being essential to the maintenance of life and the functions of the body, its quality is of prime importance. That water is the bearer of some of the most common diseases that the human flesh is heir to can not be questioned, typhoid fever being one of the most prominent that may be contracted through the medium of water. Boiling prevents the transmission of diseases by means of water. It has been suggested that distilled water would be just the thing to use. This, however, is incorrect, as distilled water does not carry the proper amount of lime and other salts that are essential to the perfect development and maintenance of the human body, and if the human system could be maintained perfectly, as it might be in many instances, it would be impractical, from the fact that the supply would be inadequate, except in certain localities, and the better plan when good cistern water can not be obtained is to boil the drinking water. The same objection may be applied to cistern water that may be applied to distilled water, namely, that it is short in lime and other salts essential to the development and maintenance of the body.

The next most important factor in connection with dietetics (and especially is this true with the English-speaking people and particularly so with the American people) is the question of eating meat, which is the source of much of our albuminous food. Nothing is more certain than that the excessive use of red meats, that is, lean beef, pork, and all kinds of red meat is deleterious, as the result is the development of uric acid in excess, which is the bane of human existence to a great degree. Aside from this, there are many other objections. We are not so sure but that excessive meat-eating has resulted in the great increase of cancer. This of itself should deter us from its excessive use. I am not certain, but I believe that the statistics go to show that there are more cancer subjects in the United States and England than in any other two countries in the world. It is possible that the United States leads the world in the number of deaths resulting from cancer.

We all remember the words of Dr. Roswell Park, who said that if the statistics of the deaths occurring in New York City were to be taken as a criterion, that within a limited number of years the mortality from cancer would be greater than that from tuberculosis, and I

believe that it is the experience of all of us that cancer is on the increase. Speaking as an individual, I certainly have within the last four years observed more cancers than any former period of my professional life, and I think this will hold good with those who are present to-night. It is difficult to understand why we Americans consume so much meat. It is expensive, and there are many other things that may be substituted for meat. I think the cause of the great consumption of meat is due to the fact that it can be procured so easily and can be prepared with such readiness, and we have simply acquired the habit of using it excessively just as men acquire the habit of using intoxicants to an excess. We have been taught from the cradle to use meat; probably the first thing in the way of food-stuff, apart from the mother's breast, that the infant receives is a piece of meat thrust into its mouth, so large that it can not swallow it. Frequently the beginning is with a chicken bone, the rounded end placed in the youngster's mouth. Thus it is from infancy to old age that we are schooled in every conceivable way to use meat, and in fact we do not know that there are other substances more healthful, more palatable, and less expensive than meat, and this dinner will be served you to-night for the purpose of demonstrating the fact that an excellent meal may be served with no meat from a warm-blooded animal.

The requisite amount of albumen which is recognized as essential may be obtained from eggs, milk, fish, oysters, and the vegetable albumen from cereals, and in this way we find perfect substitutes for meat. In recent years the efforts on the part of certain individuals to prepare food-stuffs and place them on the market has resulted in giving us some very remarkable products. One of them is protose, which is purely of vegetable origin and is a most perfect substitute for meat. I am sure when you have eaten this protose to-night that you will agree that it is palatable and agreeable, so far as the taste is concerned. The results upon the animal economy are well known, giving strength and vigor, and being free from the deleterious effects produced by meat, namely, the production of uric acid, which is the base of all our rheumatoid and gouty diseases. In short, the absence of the excessive uric acid would make it impossible, as far as we know, to have rheumatism or gout. The elimination of these two diseases from our catalogue of ailments by the non-use of meat would certainly fully repay us for abstinence from the use of that food.

Passing from albumens to the sugars, which is by far the most

important of the three solid food-stuffs proper, namely, albumen, sugar, and fat, I would say that we have yet much to learn concerning the proper use of sugar, notwithstanding we consume enormous quantities of it, directly and indirectly. I mean by this that we consume the sugar as sugar, to say nothing of the fact that the great bulk of our food-stuffs which we take as starches are readily converted into sugar. I believe the sugars and their allied substances are the least harmful of the food-stuffs when taken in excess. It is true that they may result in accumulation of fat in some instances, but the rule is that they do not. There is less fear to be entertained from the excessive use of sugars than from the albumens, even the albumen we get in eggs and milk, to say nothing of that which is obtained by the use of lean meat. I think we receive one of the most instructive lessons in the first food of the infant, namely, the mother's milk. Young animals, and especially the young of man, develop very rapidly, and the chief ingredients of the mother's milk are sugar, albumen, lime, caseine, etc., but the sugar and the fat are the prime factors, as is proven by the examination of milk of mothers who have ill-thriven children. There you will find an absence of the proper amount of fat. It should not be forgotten in this connection that sugars are fat-makers, and that feeding young children an excess of sugar is not harmful; in fact, we are told that the large livers which are found in children are put there preparatory for the emergency of the absence of sugar. In other words, if children do not receive enough sugar through the medium of ordinary channels the liver manufactures it and supplies the deficiency.

The least harmful of all our food-stuffs are the fats, whether taken directly as fat or in the shape of butter or other forms of fat it makes little difference, or whether it is the result of splitting up the sugar into fat or carbonic acid, as it is claimed that sugar undergoes such a transformation.

It has been proven conclusively that under all ordinary circumstances fat is really unchanged in the body; its globules are simply split up in the form of globules until they are reduced to one-twentieth or thirty-thousandth of an inch in diameter, which size enables them to be absorbed and deposited in various structures of the body. It has been proven that the animals fed upon certain kinds of fat, butter fat or the fat from any kind of animal, if the feeding of this kind of fat is persisted in, that when the animal is killed it is found that the same kind of fat will be found deposited in certain places of the body,

kidneys, heart, etc. This work, of course, has been done on control animals, but doubtless applies to the human body. If fat is not disposed of in this way its other means of disposition is harmless. The following is taken from the excellent work of Haig on uric acid as the cause of diseases:

In a paper in the *British Medical Journal*, 1894, volume II, on the direct introduction of uric acid into the body, its bearing on the prevention and treatment of diseases, I have pointed out that, judging from the quantities of various substances taken and the quantities of uric acid or xanthins they contain, a man may easily introduce nearly two grains of uric acid with an ordinary dinner, and as we shall see further, in chapter XVII, the percentage of uric acid from which this is calculated is probably decidedly under the truth, so that the introduction of four or five grains with a carnivorous dinner is by no means extraordinary.

It appears then from this figure that uric acid passed almost directly into the blood and urine, and that there was no first stage of stimulation due to the blood being cleared of uric acid, and this illustrates a very important point, namely, that uric acid will produce one or the other of two opposite effects according as it is introduced, with conditions which are favorable to its solubility in the blood or the reverse.

Now, in Fig. 25 the conditions were distinctly favorable to its solubility in the blood, because, as I generally take neither meat nor wine, the alkalinity of my blood runs high, and uric acid was already in some excess in that fluid on the day before the first dinner. The first dinner, therefore, failed to stimulate; it failed to overcome the depressing effect of the uric acid already in the blood; it failed, therefore, to raise either urea or acidity, and the uric acid it introduced passed almost at once into the blood, and added its depressing effects on circulation, nutrition, and metabolism to those of the uric acid previously there.

On the 13th almost the same thing occurred; there was again a failure of stimulation and a further fall of urea, and again the uric acid introduced passed almost at once into the blood, and added to the general depression. The rise of acidity in this figure is very slight, and was very probably due to the rise of urinary acidity which excess of uric acid produces (see page 39, and also chapter VII) rather than to any real fall in the alkalinity of the blood, but those who eat meat two or three times a day must not expect that they will be able to intro-

duce uric acid into their blood in the direct manner shown in this figure; with higher acidity, which they are certain to have so long as they keep well, the uric acid introduced will pass much more slowly into solution, and be much more gradually excreted. A dinner of this kind will act as a stimulant, they will feel better, and stronger, and happier for it, and nothing will persuade them that they are doing themselves any harm by taking it. And so long as they keep well they have decidedly the best of it, and can point triumphantly to very good results; it is true they are continually introducing considerable quantities of uric acid, which remain in the body and may produce now and again more or less decided reminders of their presence in the shape of gout or rheumatism; but so long as the blood is kept clear of uric acid by continued stimulation there is no great harm done, and they may suffer neither from gout on the one hand nor high blood-pressure on the other.

Unfortunately, however, in the natural course of events, as old age comes on, nutrition begins to fail and further stimulation becomes more and more difficult; then alcohol, morphine, and cocaine are, perhaps, called in one after the other to help keep the fires going brightly; at first they succeed; later, like everything else, and even in large doses, they fail, and then comes the final disaster.

Urea and acidity fall down and down for the last time, and with this the long pent up store of urates breaks its dams and rushes into the circulation with an overwhelming flood which completes the ruin.

Circulation, nutrition, and function are soon rendered nearly impossible, and the physiological wreck has a chance of destruction by some of the most terrible effects of the most severe collœmia, as we shall see in the following chapters.

If it escapes the ever-threatening rock of cerebral hemorrhage it may drift onward through some years of the discomfort and misery of high blood-pressure and chronic Bright's disease, to end in uremia on the one hand or heart failure on the other.

Long before this stage has been reached, however, it will be quite obvious to onlookers that the meat-eater has got far the worst of the argument, and presently will have to pay a terrible price for his stimulants. Figs. 25 and 26 shows what his meat does for him, and how it does it.

In the chapters that follow we shall see how uric acid in the blood blocks the capillaries, overworks the heart, prevents circulation, nutri-

tion, and combustion, and produces anemia, and how the effects of such meals as those recorded in Fig. 25 can be observed by any one who has the means of estimating either the quality of the blood or its rate of circulation through the capillaries, or the effect of the capillary circulation on the blood pressure.

Fig. 26 shows in the same way as the previous figures the effects of taking meat extracts. On the 4th uric acid is below urea, urinary water is consequently high, and acidity stands about fifty-five grains; on the 5th three drachms of Liebig's extract are taken in the course of the day, and the effect is that urea remains steady, uric acid rises quickly and decidedly, and water comes down equally decidedly, while acidity rises a little above sixty grains.

Here, again, just as in Fig. 25, the rise of acidity was probably due to the increased quantity of uric acid in the urine, and does not show any diminished alkalinity of the blood, or the uric acid would not have been so freely excreted.

The rest of the figure merely shows that uric acid comes gradually down, there being no further introduction, that acidity falls more or less in parallel with it, and that urea falls also, part of its fall being no doubt due to the diminished metabolism which excess of uric acid in the blood produces (see chapter VIII), and last, but not least, the water falls and remains low the whole time the uric acid is high, thus again proving in the most absolute manner the obstruction of the capillaries of the kidney by the excess of uric acid in the blood. Will any one, after looking at these figures, dare to tell me that I can not control, from hour to hour or day to day, the excretion of water from the kidney, or, for that matter, the circulation, function, and nutrition of every organ and tissue of the body? We shall see further on that what controls the flow of water from the kidney controls also its exhalation from the lungs, and controls, also, digestion and all its secretions.

Fig. 27 shows the effect of eight grains of hypoxanthin taken on day 2, and it appears to increase very markedly the excretion of uric acid which rises on days 2 and 3 in spite of a slight rise of acidity, and falls again on day 4 in spite of the fall of acidity. Note, also, the inverse relation of the urinary water which falls on days 2 and 3 with high uric acid, and rises again on day 4 as uric acid comes down. What I have just said about the previous figures will apply almost word for word here; the hypoxanthin does not appear to increase the urea, and so far as acidity rises this is probably due merely to the excess

of uric acid in the urine, and not to any change in the reaction of the blood.

It thus appears probable that the metabolism of the human body makes short work of the slight chemical differences between members of the xanthin group and passes the greater part of them through the blood and into the urine as uric acid, and one very important consideration forces itself in here, though I shall have to return to it again later on, namely, that if members of the xanthin group are thus converted into and must practically be reckoned as uric acid, present in any food substance, it gives only an imperfect record of the amount of uric acid it may introduce into the body, for the xanthins and hypoxanthins remain unestimated to a considerable extent. The table, therefore, which I give of the amount of uric acid found in various food substances must be taken only as showing a part of the uric acid which these substances may introduce into the body, and important substances should be put to the more valuable physiological test of taking known quantities by the mouth, and estimating the increased excretion of uric acid produced, as in the figures I am now describing. (See chapters I and XVII.)

With regard to xanthin, I note that Bunge says (in *Physiological and Pathological Chemistry*, Wooldridge's translation, 1890, page 348) xanthin occurs in too large quantity in the tissues and in too small quantity in the urine to be eliminated unchanged, and Fig. 28 shows that it is changed into uric acid.

In conclusion, let me state, first, that the flesh of warm-blooded animals is not essential as a diet for the purpose of maintaining the human body in perfect health and working condition.

Second. That we have many substitutes for meat which are free from the deleterious effects of that food upon the animal economy; namely, in the production of rheumatism, gout, and all other kindred diseases, to say nothing about cerebral congestion, which frequently terminates in apoplexy, and renal diseases of one kind or another—migraine and many other severe forms of headache resulting from the excessive use of meat, and are even produced when meat is not used to an excess. So, with the facts before us as they exist to-day, I think that it may be justly said that we are well prepared to fight the present beef trust, not only in the interest of our pockets, but what is far better, the interest of our physical bodies and our general good health.

CONVERGENT CONCOMITANT STRABISMUS.*

BY BENJAMIN L. W. FLOYD, M. D.

[CONCLUDED.]

During the first few years of life these newly acquired faculties are very easily disturbed and much more easily upset than later in life, and hence the reason of the greater likelihood of squint in children. Now, if the child fails to fuse the retinal impressions into one mental picture and produce binocular vision, the eye which receives the less distinct impression turns inward, not only from the association of accommodation and convergence, but also from the greater strength of internal rectus over external rectus, if it exists. Parents will frequently give you a history of squint beginning in infancy or childhood, following a blow on the head, a severe spell of sickness, or the most common of all exciting causes—whooping-cough. Just how these troubles can upset the convergent mechanism and produce squint is not easily explained, but if the fusion faculty is normal I believe them to be powerless. There being a failure to blend the two retinal impressions into one mental image there is no desire for binocular vision, and the eyes turn inward for the same reason that a congenital amblyopic eye squints.

This blending of the two impressions into one mental image is the fusion faculty, and where this faculty is absent or undeveloped you will have squint regardless of the refractive error, and if it is well developed you will have no squint, although the person may be suffering from hyperopia and hyperopic astigmatism. This is no doubt the condition in those cases of alternating squint in which the error of refraction is very small and about the same in each eye. They squint from the undeveloped state of the fusion faculty and from it not being susceptible of much development on account of its rudimentary condition. They do not respond to treatment as well as the monolateral form, and therefore the prognosis as to cure is not so good. Mr. Worth holds to the same views as to the etiology of squint, and believes the fusion faculty is the key to the solution of this problem and the proper development of which is the only rational treatment.

From his experiments he is led to believe that the first distinct evidence of binocular vision appears about the sixth month of age, and that the fusion faculty is normally developed by the sixth year of age,

* Read before the Ohio Valley Medical Association, Owensboro, Ky., May 1 and 2, 1902.

and therefore after that time there is not much hope of curing a squint and establishing binocular vision that will stand the strain of accommodation.

May it not be that the two retinal impressions failing to be blended into a mental picture, the eye ceases to fix, and turns inward in this early career of life, and many cases of what we call congenital amblyopia is in reality amblyopia exanopsia, or blindness from not being used, due to non-development of the fusion faculty?

The existence of amblyopia exanopsia is denied by some eminent ophthalmologists, as Schweigger, Swanzy, and E. Treacher Collins, they holding to the idea that it is congenital amblyopia, and ask the question, Why is it that a person who has been suffering from cataract for twenty years can have it removed, and after proper correction can see as well as he can after an indefinite period of practicing his acuity of vision? They do not think that this would be the case if there is such a thing as losing the acuity of vision by not using the eye.

But those that teach that there is, reply that this is not a parallel case to a child of a few years of age, whose acuity of vision has never been developed. The danger is not in losing the acuity of vision after it has once been established (as in the aged one suffering from cataract), but in not developing the acuity of vision during the period of its normal development, and hence it being defective throughout the remainder of life.

Most every one, I suppose, who has had any experience in refractive work, can recall cases in children where, after correcting their refractive error, their vision was not what you expected, but after wearing their correction for a few weeks, when re-examined it was found to be much improved.

To my mind a notable example of this defective vision from non-use of the eye is being exhibited in the South African war. The Boers, who have developed their acuity of vision for distant objects and therefore are fine marksmen, are in conflict with the English soldiers, a large part of whom are young men reared in London, a place that can not be excelled for smoke and fogs, and whose streets are so narrow and crooked that you can not see for any great distance even when the sky is clear enough for one to have a distinct view of distant objects. Now, is it anything strange that the Boers should be able to observe the English soldiers, keep out of their view, and occasionally come up on them unexpectedly and kill or capture a few of them?

In the light of the condition that we are studying there is nothing strange or notable about it. While our sympathies may be with those that are defending against great odds their homes and country, justice to the other side compels me to say that in respect to visual acuity the Boers have all the advantage.

Treatment. If the seat of this trouble is in the non-development of the fusion faculty, in these cases that have a clear refractive media, and not due to congenital amblyopia, the proper treatment is to place the eyes in as normal condition as possible by correcting any refractive error they may have, and to develop the fusion faculty before the fifth or sixth year of age, as it is thought by that time, as a rule, it is not susceptible of much more development. I know of no way of arriving at a knowledge of the error of refraction so satisfactory as by doing a retinoscopy under atropine and then giving them their full correction and having them wear it all the time.

The age at which a child can wear glasses satisfactorily is a much-mooted question among ophthalmologists, and much depends upon the disposition of the child. Some claim that with four or five dioptries of hyperopia they can wear glasses when they are able to crawl, and the only question is to find an optician with skill enough to fit the frames. Priestly Smith has placed glasses on a child as early as the tenth month, and I have seen quite a number of children between one and two years old wearing glasses with profit, and to see children between two and three years of age wearing glasses is no uncommon sight at certain places where special attention is given to this important branch of ophthalmology. Of course, these children occasionally break their glasses, but I have yet to hear of a case where any injury was done to the eye in the accident.

Next in order, if after proper correction of the refractive error the fusion faculty is not developed from the more distinct retinal impressions being carried to the brain to be blended into a single mental image, would be to instill drops of atropine into the fixing eye every morning for the first two weeks in each month, and by this means compel the squinting eye to do the fixing for near objects while the fixing eye is still used for distant vision, and by so doing you cause them to exercise the squinting eye, and thus prevent them from losing the power of fixation. Instead of using atropine drops in the fixing eye you can place a cover over it for several hours each day, and by this means compel them to use the squinting eye, but mothers

are too prone to sympathize with their child when they want the pad removed, and not allow it to stay long enough to do the good that atropine would accomplish.

A common treatment for these children, and one recommended by many ophthalmologists, is to instill drops of atropine into both eyes of those children that they think are too young to wear glasses, believing that they should not be worn until they are five or six years of age. I believe this treatment to be wrong in principle as well as inefficient in practice, for the instillation of atropine into the squinting eye is the very way to insure that it will never be used, and thus lose the power of fixation.

It may be true that paralyzing the accommodation checks the progress of the squint until you think the child is old enough to wear glasses, but if the squint is due to a faulty fusion faculty, and this fusion faculty is normally developed by the sixth or seventh year of age, we are certainly losing valuable time with this form of treatment.

According to Mr. Worth's statistics, only about 30 per cent of the cases of convergent squint that are treated by simply prescribing glasses for their refractive error recover. While the visual deformity passes away in thirty per cent of the cases, the visual acuity in the squinting eye is far below what it ought to be in many of these cases, and they have to wear glasses throughout life, as they can not withstand the strain of hyperopia. So that the optical correction, while it is a helpful auxiliary, should not be the only means of treatment, for we should not be satisfied with relieving the squint, but strive to get as good vision in the eye as is possible.

If the squint should continue after wearing the proper correction, with atropine drops in the fixing eye, the next thing to do is to train the child's fusion faculty. Of course, one encounters difficulties in attempting this in a child three or four years old, just old enough to give you sensible answers as to what he is seeing, as he will tolerate treatment and assist you in the work only so long as you can interest and amuse him.

This is done by the orthoptic treatment, and I think the best instrument for doing this is the amblyscope, which I exhibit to you to-day. By using this and developing the child's fusion faculty you cure the squint, and if not, you so develop the fusion faculty that when by operative treatment the eyes are brought into anything like parallel axes, the desire for binocular vision being so great the eye

will assume the "correct position of fixation," and you get two useful eyes instead of performing the operation merely for cosmetic purposes, as is so frequently done in squint operations, knowing that the eye, so far as visual purposes are concerned, is practically lost.

The instrument consists of two halves joined together by a hinge. Each half consists of a short tube joined to a longer tube at an angle of 120° . Along the flat surfaces of these tubes are oval mirrors. At the posterior ends of the tubes are grooves for the insertion of glass slides on which objects drawn on paper have been pasted. At the anterior ends of the tubes are convex glasses about four to six dioptries, which equal the distance of the reflected images on glass slides. In front of these are slots for placing glasses from the test case to correct any error of refraction that the child may have. The two halves can be opened or shut to suit any angle of squint.

The object slides consist of three kinds:

The first class are pairs of devices, like a boy and a hoop, a bird and a cage, a mouse and a trap, etc. These do not require the blending of the two objects into one in order to see distinctly, but to see them simultaneously with either eye. By moving the tubes you make the bird go in and out of the cage, which amuses the child, and they imagine that this device was made simply for their amusement.

The second class of slides consists of devices that require the blending of the images in order to produce an object, as they consist of halves on each slide.

The third class are merely stereoscopic pictures. The method of treatment is thus: You take a child three or four years old, place him on your knee, and hold the amblyscope before his eyes and roughly adjust it to his angle of squint. Now, if it is his first visit, place the pair of slides that have the pictures of the bird and the cage on them into the grooves and arrange the lights that illuminate the tubes so that he sees both the bird and the cage. After he sees both the bird and the cage you move the tubes and have him watch the bird go toward the cage and finally enter it. After practicing him with these slides and knowing that he is having binocular vision by his description of what he is seeing as the bird goes in and out of the cage, you go to the next class of slides, that requires the fusion of the two images into one in order to see the object, as the halves of the picture are on each slide. After you have succeeded in having the patient blend the images into one you vary the angle of the amblyscope, and thus develop a powerful desire for binocular vision.

When you have succeeded in establishing binocular vision, the next thing to do is to equalize the intensity of the lights, as in the beginning of this work you will have to bring the light that illuminates the tube of the squinting eye nearer than the light that illuminates the tube of the fixing eye, or otherwise they will not see the object with the squinting eye, since the impression that is made on the retina of the squinting eye goes by unnoticed. This you can usually do in a short time without permitting him to suppress the vision of the object with the squinting eye. As you practice the child more and more you will be able to diverge the tubes more and more, until the deviation entirely disappears.

In other cases, after establishing binocular vision and developing the fusion faculty, an operation will have to be performed in order to enable the child to maintain binocular vision for any great length of time. However, if you put the eyes approximately straight, the trained fusion faculty will supply the rest and cause the eyes to assume the "correct position of fixation." Mr. Priestly Smith advises that where the degree of the squint is so great that it will be impossible for the child to keep up binocular vision for any great length of time an operation be performed early in life, and the results of the orthoptic treatment will be better.

If the child has a perfect fusion faculty, that child can lay aside his glasses by the time he has completed the high school branches, while the child who has had only the routine treatment of glasses, if his fusion faculty remains undeveloped, will have to wear glasses all his life, as he can not withstand the strain of hyperopia.

The idea among the laity that they should keep glasses off their squinting children as long as they can, for when once they begin their use they will have to continue it throughout life, I believe to be erroneous, and the younger they have their refractive error corrected and the more attention they give to the proper development of their fusion faculty during the first few years of their lives the more likely are they that the eye will be useful for usual purposes; that they will escape the likelihood of an operation, and that they will be able to lay aside their glasses by the period of adolescence or use them only for near work.

The operative treatment of convergent concomitant squint will be left to be brought out in the discussion, my object in this paper being merely to call your attention to the great importance of correcting the refractive error in these cases as soon as the squint develops, and training the fusion faculty during its period of normal development.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, May 13, 1902, the President, William H. Wathen, M. D., in the Chair.

Kidney Stone. Dr. Ewing Marshall: This specimen is a stone from the kidney, which was passed this week by the patient. While these stones may not be very large, they sometimes give the patient agonizing pain in passing. I thought it might interest the Fellows of the Society to examine this calculus, and I shall make only a brief report of the case.

If you will look at this stone you will see why it did not give the patient as much pain as they usually do. The patient has been under my care some time, and has passed a number of kidney stones. I was called last Sunday evening and found the patient suffering with pain; it was not the severe, agonizing pain he has usually had during these attacks. I delayed the giving of morphine for two hours, but finally gave him a hypodermic of one quarter grain. I have usually had to give him one half a grain, and after the expiration of about an hour administer another quarter grain, on account of the severe pain which he has suffered. During this attack I gave him only one quarter grain of morphine. The attack began about eight o'clock in the evening; the pain lasted for about the usual length of time, then stopped. He did not suffer during this attack the severe, agonizing pain which has attended all previous attacks, and the reason for it was that this stone is not pointed, with sharp, cutting edges, like the others have been, but is rounded off, like a grape-seed. There is some little sandy material attached to it, but all the edges are rounding, and for this reason the patient did not suffer so much pain in its passage as is usually experienced.

Discussion. Dr. W. H. Wathen: This specimen is large enough, were it sharp, to have occasioned intense pain. I remember Mr. W., of this city, whom you all knew, once or twice a year would pass a renal calculus. I was his physician for many years. The calculi were seldom larger than a pinhead, but they were hexagonal in form and sharp as a knife. He had considerable hemorrhage, and suffered the most

*Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

intense agony during the passage of these stones. He would have semi-paresis of the bowels for five or six days; we could not get his bowels to move, nor could we induce the passage of gas, and he would be confined to his bed for a week or ten days during and subsequent to the passage of calculi, because of the traumatism committed by the small calculi upon the ureter. The amount of suffering depends largely upon the character of the stone. Sometimes large stones will pass without much pain, because they have not sharp, cutting edges.

Hypertrophic Fibrosis of the Pylorus (continued report). Dr. J. W. Irwin: You will remember at the last meeting of this Society I exhibited a gentleman, Mr. C. H. F., of Lawrenceburg, Kentucky, and outlined the history of the case, which was rather extensively discussed.

I continued my investigation of the case. The urine was examined by Dr. J. E. Cashin, who states that he found nothing abnormal—no albumen, no sugar, no blood, no pus, specific gravity .1025, urea 2.6-10 per cent; no uric acid, no casts, no micro-organisms.

At my request Dr. Cashin washed out the stomach of the patient and gave him a test meal. This test meal consisted of four ounces of wheat bread and one pint of water, which was allowed to remain in his stomach for one and one quarter hours; it was then withdrawn by means of a stomach tube and tested. The following report was made:

"Examination of the stagnant contents of the stomach showed free hydrochloric acid present; lactic acid also present. The contents of the stomach have a marked etherial odor, that of apple brandy taken eight hours previous to emptying the stomach. The contents measured two quarts."

The patient was then given the test meal above referred to, and after one and one quarter hours, the contents of the stomach being withdrawn by means of the stomach tube, the following was shown:

"Stomach contents after test meal: Reaction, acid; total acidity, 67 per cent; acidity expressed as hydrochloric acid, 24 per cent; lactic acid absent." ∴

The patient then again consulted me with reference to what was to be done. I advised that he should immediately consult a surgeon. I gave him a letter to Dr. E. C. Dudley, of Chicago, mentioning in my letter to Dr. Dudley the diagnosis I had made, and requested if he made an exploratory incision to be kind enough to report what he found. I received the following letter from Dr. Dudley yesterday:

CHICAGO, ILL., May 10, 1902.

I am sorry to make an unfavorable report of the result in the case of Mr. F., whom you kindly referred to me. I first examined him upon his arrival about a week ago. His temperature was subnormal, being only about 95.5° , and his pulse about 50, and rather weak. The blood count and estimate of hemoglobin showed the blood to be substantially normal, and the urinalysis gave negative results. The test meal was given and the stomach contents examined with no significant result save that there was hydrochloric acid and no lactic acid. I proceeded at once to give him most of his food per rectum, reserving only certain easily digested liquid things for the stomach, and gave tincture nux vomica. The idea was to get him, if possible, into a better condition for radical operation. Under this treatment he improved perceptibly.

On Monday morning, when I went to the hospital, I found that he had just been attacked with sudden, severe general abdominal pain, that the pulse had risen to 110, and that the temperature had risen one or two degrees above normal. An hour or two of observation convinced us that there was a perforation somewhere in the alimentary tract. This attack did not follow the taking of any food whatever by the stomach, the last food by the stomach having been taken twelve hours before.

As soon as arrangements could be made, Dr. McArthur and I together proceeded to open the abdomen, and there we found a tumor at the pylorus through which had escaped the stomach contents, including an enormous quantity of bile, into the peritoneal cavity. We immediately washed out the entire abdomen with many gallons of hot salt water and made a gastro-enterostomy with the Murphy button, stitched the perforation into the upper angle of the abdominal wound, and closed the remainder of the abdominal wound with two glass drainage tubes, one passing upward and the other downward. There was considerable improvement in the pulse and in the general condition immediately following the operation, but the improvement did not continue. On the contrary, he passed rapidly into an exhausted state, and finally into a condition of shock, with progressively high temperature and pulse rapidly rising to the vanishing point. He died at half-past four o'clock Wednesday morning, about thirty-nine hours after the operation.

The stomach was enormously dilated, to the capacity of more than a gallon. There was, as you had already diagnosed, a very tight stricture and a tumor at the pylorus. I think you are to be very much congratulated upon your diagnosis.

A microscopic examination of the growth will be made promptly, and I shall send you some of the slides, with a report of the pathologist.

I am sorry that I have not been able to be of service in this very distressing case, but the conditions, as you will readily understand, were prohibitory. Had it not been for the perforating ulcer, which we had no reason to expect would come at this time, we might have saved this patient by means of gastro-enterostomy.

(Signed)

E. C. DUDLEY.

[REPORT OF THE PATHOLOGIST.]

Stomach: Macroscopical. Stomach greatly dilated; held nearly one gallon. Mucous membrane of cardiac end congested; pyloric end pale; to one side of pylorus was a sharply defined bile-stained opening (rupture). Surrounding this and extending some distance was a hard, dense, whitish tumor-like mass; the pylorus was not occluded, but was diminished in size.

Microscopical. The sections show a dense connective tissue structure, slightly infiltrated with small round cells; while at one edge of the dense tissue was an area of intense round-cell infiltration with practically no connective tissue. This area corresponded with the edge of rupture. There was no indication of malignancy.

Summary. Dense connective tissue formation, with area of intense small round-cell infiltration near rupture; no malignancy; pylorus diminished but not occluded.

ERNEST B. HOAG, M. D., *Pathologist.*

This is the sequel to the case of Mr. F., which was reported to you April 22, 1902, and the patient shown at that time.

Discussion. Dr. M. F. Coomes: This case illustrates the old story of delay. If this man had been properly cared for three to six months ago he might have been spared two or three years at least. The diagnosis could have been made then as accurately as now, and if an operation had been performed then his life might have been prolonged many years.

Dr. W. F. Boggess: This is one of the most interesting cases we have ever had shown us, and the diagnosis Dr. Irwin made has been thoroughly proven by the operation and post-mortem. It will be exceedingly interesting to us to have the pathologist's report upon the character of the tumor found present. If the growth is found to be cancerous it will be an illustration of the fact that we do sometimes have cancer present with hydrochloric acid and without lactic acid.

Case of Appendicitis. Dr. J. M. Krim: Six weeks ago I was called very early one morning to see a lady aged sixty-nine years, who had intense pain in the abdomen, particularly upon the right side. The attack came on during the night previous to my being called, she having some attacks at intervals for a year or more, but not so severe as this one, and by means of hot applications, a brisk cathartic, etc., she would obtain relief, but had not done so this time. At six o'clock

in the morning I found her suffering great pain, temperature 103° F., pulse 120. I gave her a hypodermic of morphine, and repeated the same in half an hour before she had any relief. I went back an hour afterward and found her fairly free from pain. I then made a thorough examination. I found in the right side a tumor of considerable size, and made the diagnosis of appendicitis. As her temperature was still 103° F., I did not believe an operation indicated at that time. I gave her a mild cathartic, advised the application of ice-bags to the abdomen to try, if possible, to control the inflammatory condition which I thought was going on, and in the course of a few days, when the temperature went down, suggested an operation.

Dr. W. H. Wathen was called in consultation and we advised operation at once, but the family did not take kindly to it. Four days afterward another examination was made, and we found an additional tumor two or three inches from the appendiceal tumor, and believing it to be a malignant condition did not advise operative intervention just then. Six days afterward an immense abscess showed itself, and an operation was performed that day.

I show you some photographs which Dr. John R. Wathen kindly took, which show the extensive sloughing which took place. There was an immense quantity of pus and a gangrenous condition of the abdominal wall, a great deal of which was removed, leaving the immense opening the photograph shows.

The old lady lived about a week after the operation, and then succumbed to general exhaustion from the continued septic condition. What I could not understand was the immense amount of necrosis and sloughing which took place in the short time, especially so it being extra-peritoneal, and which continued even after the cavity had been cleansed as thoroughly as was possible; it continued to slough, and an immense quantity of tissue came away.

Discussion. Dr. W. H. Wathen: The case reported by Dr. Krim was seen by me several weeks after the patient had suffered an attack of appendicitis. At that time the woman was very feeble, and there was, near the pelvic brim, a very hardened condition, which had been there apparently for some time, and which indicated the possibility of malignancy without any outward manifestation of pus. So we thought possibly it was best, considering the age of the woman, not to operate at once, but to await results. A few days subsequently I was

called, and found the entire tissue over the appendiceal region, and extending over beyond the pelvic wall on the right side, in a gangrenous condition; that an enormous abscess had ruptured through the abdominal wall, showing that the enlargement which we thought was malignant was an inflammatory infiltration deeper down in the tissues. We opened the fistulous tract thoroughly, and provided for drainage. Gangrene extended over a surface five or six inches in diameter, deep down into the muscular structures; sloughing was extensive, despite our efforts at cleansing and thorough drainage. No opening was made into the free abdominal cavity for fear of washing some of the infective pus into the cavity and increasing the trouble which already existed. The wound drained well. The woman evidently died from the absorption of toxic material from this great quantity of pus and the extensive gangrenous surface. The tissues around the sloughing surface became perfectly normal.

I understand that the patient had suffered repeated attacks of appendicitis, and if an operation had been performed early there might have been a chance of prolonging her life.

The essay of the evening, "Dietetics," was read by M. F. Coomes, A. M., M. D. (See page 1.)

Discussion. Dr. S. G. Dabney: I have always thought more people were harmed by over-eating than by smoking and other kindred habits, and especially is this true of the over-consumption of meats. The financial wealth of the people of the United States makes them greater eaters of meat than the people of other countries. Like Dr. Coomes, I believe there is a great deal in the uric acid theory.

Dr. M. K. Allen: One by one the articles of diet are being taken away from us. To-night Dr. Coomes proposes to take from us the meats, which perhaps all of us have eaten since the first days of our recollection. If some of you were to visit the Health Office laboratories and see the work that is going on there, and the kind of stuff that is being offered for sale to be eaten, you would conclude that the only articles of diet left for us would be potatoes and fresh-laid eggs.

Dr. Carl Weidner: Dr. Coomes has given us a most excellent paper, quite out of the ordinary lines, something of general utility to all of us, and one which could be talked about for many hours. In the discussion we can not enter upon every point of interest, because of the limited time.

He spoke of the use of water. We all know that water is very beneficial in the widest sense from a physiological standpoint. Water also plays an important part in heat regulation. We consider that every gram of water lost through the skin carries away with it six hundred gram-calories of heat, showing the importance of surface evaporation of water.

But on another physiological question I differ with him, according to the most accepted view of physiologists, and that is about the method of the absorption of fats. He states that the fats enter the body as such, and are deposited in the different organs of the body unchanged. I agree with him that some of the fats are more valuable to the human economy than others, and some are in a certain sense more digestible than others. But according to his view the fats are emulsified and absorbed as such. This is a theory which is held by many of the leading physiologists to-day, and is accepted because small globules of fat have been seen under the microscope, when properly stained with osmic acid, passing through the epithelium or the villi of the bowel. The majority of physiologists, however, are inclined to accept the view that fats are not taken up altogether in this way, but they are split up into their radicals, fatty acids and glycerin; that synthesis occurs within the epithelial cells lining the bowel, forming neutral fats, which pass from the cells into the lacteals, and are then deposited in the different parts of the body. This splitting up is possibly due to the combined action of the pancreatic juice and the bile acids and bile salts.

I am sorry to see that Dr. Coomes has a case of "Haig's disease." I think he must have gout, inasmuch as he has become so partial to the teachings of Haig. Haig, as you know, attributes almost every disease to uric acid. I do not believe that meat is the only source of uric acid. We know that the urine of birds is constituted purely of uric acid, and birds are not carnivorous, but are practically vegetarians. The urine of cannibals probably does not contain as much uric acid as that of birds, though on this point we have little or no information. So we finally come back to the individual himself and the question of oxidation. If the oxidation of proteids is properly carried on you find a soluble product excreted by the kidneys in the form of urea, and not uric acid. We have diseases, for instance, where a tremendous amount of uric acid is formed. In leukemia we know that is the most marked factor—a tremendous increase of the leucocytes, with alteration of the different forms, with increased formation of nuclein—and this is the very

disease which has given rise to the study of this question. Chemically physiologists have found that uric acid is attributable mainly to imperfect oxidation of the nucleinic substances (the white blood cells are in excessive ratio almost pure nucleinic matter). Any condition which will give rise to this, to imperfect oxidation, will help in the formation of imperfect-oxidation products, such as xanthine, hypoxanthine, etc., which are retained in the tissues instead of being excreted in the form of soluble urea.

It seems to me that the question of excess of uric acid in the body narrows down to imperfect oxidation. I believe that this is the cause. I agree, however, with Dr. Coomes that as a rule we eat too much meat. We could get along just as well with less meat. We eat too much proteid substance in the way of meat, rather than in other forms which are perhaps more readily changeable. In eggs and milk we have everything needed in the way of proteid food. The vegetable proteid substance gluten I believe is an excellent substitute for the proteids of meat, and is perhaps more readily oxidized. We know that beans and peas contain more proteid matter than beef, besides being rich in carbohydrates—beans contain from 22 to 23 per cent, while beefsteak contains from 18 to 20 per cent proteid. Thus we might go on indefinitely defending a vegetable diet. I believe that man was intended to be an omnivorous animal. We are so constituted that we may take with impunity a mixed diet, animal as well as vegetable, but I also believe too much meat is injurious.

Dr. W. F. Boggess: While I have enjoyed the paper read by Dr. Coomes, I agree with everything that has been said by Dr. Weidner. I differ with Dr. Coomes in many of the views he has expressed. I think any one who follows Haig's theoretical ideas will certainly fall into error. There is no question about Haig's having written one of the most readable books that has ever been produced, and while reading it one is almost impressed with its utter truthfulness; everything seems proven. But his work is simply based upon his impressions and some very imperfect experimentation upon himself, and his conclusions are not at all admissible or tenable. On the contrary, I think you will get more good ideas about metabolism and nutrition from Bouchard's little work on auto-intoxication than any other book on this subject extant. Bouchard deals with facts, while Haig only puts forward a theory which has never been proven.

Physiologists make a mistake in assuming that milk contains everything needed in the diet of an adult person from the simple fact that

a young child lives, grows, and is properly nourished on purely a milk diet. At different ages we are constituted to digest different substances, and our stomachs require different food products. There is no question that to some persons milk is an absolute poison. I do not care how much a person might be able to take, it would be an imperfect diet for an adult; it is a proper diet in infancy, but at no other period of life. You can take a dog or a pig and feed it exclusively upon a milk diet, and you will find the most marked disturbances of nutrition, and it will become rickety.

Again, we are inclined to look upon the substances known as uric acid and urea as greater poisons than they really are. They are simply manifestations of malnutrition—they are not the causes of diseases which we too frequently attribute to these substances. The question is one about which we know little, but we do know that as a result of malnutrition or faulty metabolism we have an excessive amount of uric acid and urea in the economy. They are only manifestations of this faulty metabolism, and not the true causes of the symptoms as we find them.

The essayist spoke of urea being the cause of symptoms, and oftentimes death, in uremia. I believe that it is an established fact that urea is not a poison in itself—it is a stimulant; instead of being poisonous to the kidneys, it is nature's diuretic. We can not produce any of the symptoms of uremia by the injection of urea.

Dr. J. W. Irwin: This is a new department from cutting off limbs, opening the abdomen and removing tumors, etc. It comes down at least to where we live. So far as the work of Alexander Haig is concerned, he gives us some valuable information on the question of uric acid in health and disease, and challenges the world to disprove anything he has written. He draws deductions from older writers along the same line, and proves, by his own experiments in hospitals and on himself, cause and effect. So far as it goes we must accept what he says to be true, but the uric acid theory is still in its infancy. More light has been thrown on it by Haig than any other writer, but there is still much to be proven.

It is a well-known fact that beef does not cause gout in itself, but that it is a factor seems to be proven, because it conduces to the formation of poisonous products in the tissues (xanthines) which appear to be the causative factor. So far as the question of food is concerned it would seem that the food of the human being ought to be animal, because the baby nurses at its mother's breast.

I can speak from experience as to the use of milk. I have had two patients under my care suffering from peculiar disorders; one of them lived for eighteen months on milk alone, and gained in that time twenty-eight pounds in weight. The other patient, her sister, lived a little over eighteen months on milk alone, and she gained twenty-two pounds in weight. In only one instance did either of these patients depart from a strict milk diet—the second case mentioned on one occasion ate a small piece of bread, which was followed by emesis; the matter ejected contained blood. She had a peptic ulcer. After that she confined herself to the milk diet until I gave her permission to do otherwise. The amount taken in the beginning was one and one half quarts per day; later they took as high as three and one half quarts a day.

Dr. P. F. Barbour: Dr. Coomes falls into the usual mistake in regard to distilled water. He says distilled water is not good for the system, and then advises us to drink cistern water. I think distilled water is the best in the world, if properly prepared. Most of the distilled water we get has some foreign product in it, which gives it a disagreeable flavor.

We get plenty of salt in most articles of food; salines are present in most vegetables and fruits. We do not need to drink water to get salines.

I do not agree with Dr. Coomes in the matter of sugars being totally uninjurious. We see in children very bad results from the over-eating of sugar. I have seen a good many children whose throats were out of order from taking too much sugar, where tonsillar and lymphatic conditions developed in the throat of the child from having eaten too much candy. Sugar is injurious to the child because it takes a certain amount of oxidation to burn up that sugar. If too much sugar be taken, or too much fat, there will be suboxidation instead of thorough oxidation.

The physiology of digestion and absorption of fats are a little different, according to my recollection, from what Dr. Coomes has stated to us. Certainly a change takes place in the fat before it is stored up in the system. The fats break up into fatty acids and glycerin, and there is a recombination of the fatty acids before they are absorbed into the system.

I believe American people eat too much meat. Meat requires a large amount of oxygen before it can be burned up in the system. Too

great an amount of proteid matter in the system is injurious, because it can not be thoroughly oxidized, and hence compounds intermediate between albumen and urea are formed, and these often are toxic. Personally I believe that proteid matter from beef is more digestible than that derived from the bean or pea.

Dr. W. H. Wathen: Theory is all right as far as it goes, but practical observation is of far more value. I assume that I have had opportunity of observing this question more than all of you combined, having recently spent three weeks among a class of people who use no meat at any time, and it has positively demonstrated to me that meat is unnecessary—that the healthiest people in the world never eat meat; that those who have the most beautiful complexions, who are the most enduring in their work, who are the most amiable in their disposition, who are the least addicted to the use of whisky, wines, opiates, sexual excesses, etc., are those people who do not eat meat. It has been demonstrated that persons who have been addicted to the excesses I have mentioned, while upon a meat diet, have entirely abandoned them while living upon an exclusively vegetable diet, but returned to the excesses when a mixed diet was again resumed.

No well-trained Seventh Day Adventist eats meat, and you will not find healthier people in the world than these people, nor people more free from excesses of all kinds. I had occasion to observe, at Battle Creek, Mich., for three weeks, the nurses, the doctors, the medical students—and I have never seen brighter medical students in my life, nor have I ever seen such healthy-looking people as they are, and not one particle of meat do they eat. I lived among them for three weeks without any meat. I did not want or feel the need of meat, and I gained while there one and one half pounds per day. Vegetarians are the most enduring people in the world; the laborers on the coast of Spain unloading vessels work longer hours and carry heavier weights than meat-eaters, and they never eat any meat.

The question of vegetarianism is a large one. You must prepare these things properly. Take, for instance, some of the cereals: We cook oatmeal between thirty and sixty minutes and think it is ready to be served, whereas at Battle Creek they cook it at 360° F. for three to six hours, and when prepared in this way it is easily digested and nourishing. Many of the Battle Creek products are already predigested, so that they are readily assimilated.

As to the question of milk: In my own person, in 1880, I lived for ten days on an absolute milk diet. I did not even take a drink of water

during that time, and I gained over a pound a day. You can live almost indefinitely on milk.

Protose, made of the gluten of wheat and peanuts, is a substitute for meat. It is easily digested, easy of assimilation, and nutritious, and when properly prepared you can eat enormous quantities without ill effects.

One of the most admirable dinners I ever ate was at Dr. Kellogg's, where no meat was served, the cooking being done with vegetable and nut oils instead of lards and greases.

Dr. M. F. Coomes: The question of absorption of fats, relating purely to the physiological action, might be argued from both sides indefinitely; but it is a matter which has been decided by experiment time and again, and I will not further discuss it.*

Referring to Dr. Boggess's remarks about milk: If there is any one diet in the world which is absolutely perfect, it is milk. A year and a half ago I found myself drinking three to six pints of milk a day, and in a short time I had gained fourteen pounds. I then quit drinking milk, and lost what I had gained inside of eight weeks. While it is true that milk may disagree with some people, still it is the most perfect diet in the world.

So far as the question of abstaining from meats is concerned, the advisability of this can be demonstrated in many ways. Monks never eat meat, and they have given us more real scientific work and scientific investigation than any other class of people in the world; they are vegetarians.

P. F. BARBOUR, M. D., *Secretary.*

* See Stewart's *Manual of Physiology*, page 454; Raymond, *Human Physiology*, page 256; American *Text-book on Physiology*, pages 258 and 290, and Simon's *Physiological Chemistry*, page 390.

NEW YORK ACADEMY OF MEDICINE—SECTION ON
ORTHOPEDIC SURGERY.

Meeting of April 18, 1902. George R. Elliott, M. D., Chairman.

Dr. J. H. Waterman presented the case of a child with congenital elevation of the left scapula. The X-ray revealed the condition of elevation, and also a bony plate running from the spine of the scapula to the seventh cervical or first dorsal vertebra. The advice of the Section was asked as to treatment. It was stated that Wilson, of Philadelphia, had reported two cases treated by operation. In standing, the elevation of the shoulder was marked, and the head was held slightly inclined to the left side.

Dr. Russell A. Hibbs said he had observed a similar case in a subject twenty-five years old, showing also a plate of bone connecting the scapula and seventh cervical or first dorsal vertebra. He advised operation in the case presented by dividing the bony attachment.

The Chairman wished to know what was done in the cases referred to after division of the bony plate of attachment to prevent reunion.

Dr. S. A. Twinch stated that he had witnessed the operations of Dr. Wilson referred to, and that no steps had been taken to prevent reunion.

Congenital Dislocation of the Hip. Dr. Royal Whitman presented a series of ten cases illustrating the treatment of congenital dislocation of the hip. The cases were of interest as demonstrating the curability of the affection. In the entire number there had not been a relapse since treatment had been discontinued. With one exception the patients had been operated upon by the bloodless method of Lorenz, slightly modified in certain instances. At the present time, as would be evident upon inspection, it was impossible to say which limb had been treated.

The record of the cases is as follows:

1. C. P., female, dislocation of the left hip; operated upon at the age of nineteen months, April 19, 1897. The plaster bandage was removed on October 12, 1897.

2. O. H., female, dislocation of the left hip; operated upon at the age of five years, May 20, 1897. Plaster bandage removed March 15, 1898.

3. L. S., female, dislocation of the left hip; operated upon at the age of nineteen months, November 15, 1897. Plaster bandage removed June 15, 1898.

4. F. C., female, dislocation of the left hip; operated upon at the age of two and a half years, October 11, 1899. Plaster bandage removed June 2, 1900.

5. A. C., female, dislocation of the right hip; operated upon at the age of two and a half years, January 28, 1900. Plaster bandage removed August 9, 1900.

6. V. R., female, congenital dislocation of the left hip; operated upon at the age of four and a half years, January 31, 1900. Plaster bandage removed August 22, 1900.

7. E. R., female, dislocation of the left hip; operated upon at the age of two years, May 22, 1901. Plaster bandage removed September 13, 1901.

8. F. C., female, dislocation of the left hip; operated upon at the age of four years, July 2, 1901. Bandage removed January 7, 1902.

9. M. L., female, dislocation of both hips; operated upon at the age of two years, May 10, 1899. Plaster bandage removed November 10, 1899. A perfect cure on the right side, not perfect on the left.

10. M. A., female, dislocation of the left hip; operated upon at the age of five years, October 30, 1900, by arthrotomy, without excavation of the acetabulum. Plaster bandage removed October 10, 1901. Perfect cure.

Dr. Whitman said that Case No. 5 had been of much interest. On removal of the spica bandage a limp had persisted for many months, accompanied by slight outward rotation of the foot. If the limb were rotated slightly inward the X-ray picture showed an apparently normal joint. The persistence of the limp was due apparently to laxity of the capsule and to slight anterior twist of the upper extremity of the femur. To his surprise the child had steadily improved, and at the present time, more than a year and a half after the discontinuance of treatment, there was practically no trace of disability.

In Case No. 9, bilateral displacement, the left hip was originally recorded as a transposition, but after a lapse of nearly two and a half years there was no shortening and but a very slight limp. The head of the bone was apparently secure in a position slightly anterior and external to the normal. This result was far better than after the ordinary transposition, in which there was always a certain amount of shortening and a characteristic limp.

The case in which arthrotomy was performed was not only of interest as showing the perfection of the cure obtained by this method, but also

in that the patient is one of three children of one mother, each having congenital dislocation of the left hip. The eldest child, now about eighteen years of age, was untreated, and presents a shortening of the limb of three inches. The second child, after three unsuccessful attempts by the bloodless method, was operated upon by the Hoffa-Lorenz method, with excavation of the acetabulum, on October 25, 1898, at the age of five years. The final result was very satisfactory.

Dr. R. H. Sayre considered that the results of the cases presented a great advance in the treatment of congenital dislocation, and that a few years ago such a collection of successful cases would have been impossible.

Dr. George R. Elliott said the remarkable showing of good results by Dr. Whitman ought to fully answer those still skeptical about the non-cutting operation. He noticed that the patients were all apparently under four years of age at the time of operation. A very large percentage could be cured at that age. The Lorenz method, even if it did no good, certainly did no harm, and in older cases warranted its use before cutting was resorted to. He further said that it could usually be determined at time of operation what the final result would be; at least such was his experience. He asked Dr. Whitman what percentage of his operations showed failure, and if he reduced both hips at time of operation in double congenital hip dislocation.

Dr. Whitman stated that in the case of bilateral displacement both hips were treated at one sitting. He said that he had modified the Lorenz method somewhat, in that he usually extended the plaster bandage below the knee, the leg being flexed upon the thigh at a right angle, with the object of fixing the part more securely. At the end of two months the leg portion of the bandage was removed. In certain instances the femur was rotated slightly inward, in order to fix the head of the bone directly beneath or slightly internal to the femoral artery. He had on other occasions stated that not more than twenty-five per cent of the cases were cured by this method, but the indications in his later operations were much more favorable. He did not agree with the statement of the last speaker that the result of treatment could be foretold at the time of operation. In many instances an interior twist of the upper extremity of the femur made failure inevitable, and in many instances arthrotomy and osteotomy would be essential, excavation of the acetabulum being reserved for exceptional cases.

Coxa Vara. Dr. Whitman presented a boy about seven and a half years of age illustrating the cure of coxa vara by cuneiform osteotomy at the base of the trochanter. The patient had been presented to the Section at a previous meeting by Dr. Taylor. According to the mother's account he had limped ever since he began to walk. Although the operation was performed five months ago, the functional cure was perfect.

Alcoholic Arthritis. Dr. Elliott presented the case of a boy aged twelve years, who some three years ago began to have swelling of the joints of the fingers and wrist. The right wrist, the distal joints of the fingers of both hands, and the distal joints of the first and second toes were involved. The liver was enlarged, projecting below the umbilicus; the spleen was enormously enlarged, and there was only a slight enlargement of the lymphatic glands. The mother stated that the boy having been badly nourished, she had give him whisky daily for about a year and a half. He regarded this as the etiological factor of what he thought could rightly be designated alcoholic arthritis. Arthritis deformans was excluded, since that grows progressively worse and is not accompanied by enlarged spleen. Under proper nourishment and little general medication the symptoms had nearly all disappeared. Heberden nodes still persisted, something very rare in children.

Destruction of the Lower Epiphysis of the Tibia. Dr. Hibbs presented the case of a boy eleven years of age, first seen October, 1900, with deformity of the right tibia following a severe fall, supposedly resulting in fracture. The deformity was corrected by osteotomy. He suspected that the lower epiphysis of the tibia had been injured, and this was corroborated by the recurrence of the deformity after operation. At time of operation the right tibia was twelve and one-eighth inches long and the left thirteen inches. If left untreated the deformity would progress. Members of the Section were asked if they had had any experience in the treatment of such cases by destruction of the epiphysis of the fibula.

Dr. Whitman said that a member of the American Orthopedic Association had made the statement at its last meeting that he suffered from a disability similar to the case reported; that his fibula was two inches longer than the tibia, yet the disability and deformity were so slight that from his personal experience he had advised against operation such as had been suggested.

Dr. Sayre said he thought destroying the epiphysis of the fibula, as suggested by Dr. Hibbs, would not result in as useful an extremity as by leaving the limb untreated, since it would produce considerable shortening. He suggested slitting the tibia lengthwise, sliding the pieces past each other, and so lengthening the tibia sufficiently to bring the articular surfaces parallel with the ground.

Dr. Hibbs also presented a child three years of age when first seen by him in October, 1900. One month previously it had been operated upon in a general hospital for osteomyelitis of the lower end of the right femur. This was followed by complete paralysis of the quadriceps extensor. This paralysis persisted with no response to either electrical current. No other muscle was affected, and it was believed to be due to division of the tendon or muscle, with failure to unite.

Fractured Vertebral Column. Dr. Elliott presented a specimen of a fractured vertebral column removed from a man twenty-nine years of age, first seen in 1897. One year prior to that he attempted to hold a quarter of beef which had slipped from its pin, and immediately felt a severe pain in his back. He remained in bed one week. He then attempted to go about, and did so for one year with gradually increasing motor and sensory paralysis of both lower extremities, and then developed a marked kyphosis at tenth dorsal vertebra. Plaster jacket did not improve matters; the paraplegia became complete. He was subsequently operated upon by Dr. Gerster at the Mount Sinai Hospital, and evidence of fracture was found, with bony fragments pressing upon the cord. These were removed, but Dr. Gerster expected no benefit to result. Patient finally died, and the cord was found completely severed. Duplex reflexes lost. The progressive nature of the paralysis and the absence of involvement of the bodies of the vertebræ, with a well-marked kyphosis, were interesting features, and also the faulty diagnosis of caries which at one time had been made. The angular prominence simulated the "boss" of Pott's disease very closely.

Dr. W. M. Leszynsky considered the history of the case very interesting, and thought that it was hardly probable that any one, from the history, would have made a diagnosis of fracture. He thought there was a slight injury to the cord and dura, which set up a myelitis secondarily, becoming finally complete, with ultimate destruction of the cord. It was well established now that complete division of the cord produced loss of all reflexes below the site of section. He cited a

case of his own of a patient who had fallen from a height of twenty feet, fracturing the tenth, eleventh, and twelfth dorsal vertebræ, with immediate paralysis and complete loss of reflex action, sensory and motor power. The diagnosis was readily made in that case, and confirmed at autopsy.

Early Treatment of Disability following Infantile Paralysis. Dr. A. B. Judson reported a case of varus of the left foot in a boy of five years. Leverage by braces cured the varus, but could not remove paralysis of calf muscles and calcaneus. The riser was omitted from the inner side, where it had given leverage against the varus, and the upright was made of one piece with the tread, which was shaped to the instep and could readily be bent down or up, as the boy required more or less "toe" in walking. With this brace (exhibited) walking was without a trace of lameness. Deformity had been prevented and fibers developed which without early locomotor activity would have disappeared.

Dr. Charles H. Jaeger presented a specially made gouge, devised by a French surgeon, for the purpose of scooping out the acetabulum in operations for congenital dislocation of the hip.

Reviews and Bibliography.

Regional Minor Surgery. By GEO. G. VANSCHAICK, M. D., Attending Surgeon to the French Hospital and to the St. Vincent de Paul Orphan Asylum, New York. Published by International Journal of Surgery Co., 100 William Street, New York. Price, \$1.50.

Containing about two hundred pages and profusely illustrated with drawings made especially for this book. It is bound in cloth and white leaf, printed on heavy book paper, and devoted to the treatment of the surgical conditions that are met with in the daily practice of every physician.

This book is thoroughly practical and presents the subject in an interesting and instructive manner.

The Surgery of the Rectum. By CHARLES B. KELSEY, A. M., M. D., late Professor of Pelvic and Abdominal Surgery at the New York Post-Graduate Hospital, and Professor of Rectal Surgery at the University of Vermont; Member of the New York Academy of Medicine, of the New York Medical Society; Honorary Member of the Maine Medical Society, etc. Sixth edition, illustrated by two hundred and fifteen engravings. New York: William Wood and Company. 1902.

This is a book of some four hundred pages. It is well illustrated and a well-written book. Dr. Kelsey needs no introduction to the professional

public, and it is questionable if any word of ours would add anything to his work. He says in his preface that he has tried to present the surgery of the rectum as it appears to him after twenty-five years of practice. That it includes of necessity some surgery of other pelvic and abdominal organs will be evident. While the book is intended to contain all recent scientific advances as well as the writer's personal experience, the aim has been to leave out all matter not of practical value, to condense as far as possible, and to produce a concise work adapted to the wants of those who desire to treat intelligently all rectal affections, no matter what their complications may be.

THE FUTURE OF GENITO-URINARY SURGERY.—Professor Reginald Harrison, of London, in a recent address delivered at the Cornell Medical College, spoke of the retrospects and prospects of genito-urinary surgery. After gracefully mentioning the large share taken by American surgeons in the advance of this branch of our science, he clearly pointed out the directions in which further work should proceed.

The etiology of vesical calculus has made comparatively scant progress since the researches of Rainey in 1851. Further study in the chemistry and the physiology of this subject should result in discoveries that will be of the utmost importance in the treatment, and especially the prevention, of stone in the bladder.

Prostatic hypertrophy perhaps points out a more important path for future research than does any other division of genito-urinary surgery. The distinguished speaker dwelt upon the importance of differential diagnosis as to the exact form and location of prostatic enlargements, and showed how certain modifications bore upon the mode of treatment to be adopted in each individual case. The Bottini operation, for instance, is most efficient in obliterating the upper portion of the enlarged prostate, which interferes with urination by its projection in the trigone. The accurate adaptation of treatment to each individual case must be the only scientific way of dealing with this condition, hence a more extended study of the manner in which the gland is enlarged must produce far better results than any that have thus far been accomplished.

We have certainly not heard the last word in regard to the surgery of the kidneys, and Prof. Harrison points out possibilities in the way of discovering whether certain forms of albuminuria, and the degenerative changes that may occur in connection with them, may not soon become amenable to surgical exploration and treatment. In the condition which he happily terms renal glaucoma, in which the inflammatory lesion has given rise to severe congestion and tension, exploratory incision and puncture may give excellent results, but a general employment of such methods can only become justified after we shall have learned more about this organ and its functions.—*International Journal of Surgery.*

THE AMERICAN PRACTITIONER AND NEWS

"*NEC TENUI PENNÂ.*"

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H. A. COTTELL, M. D., M. F. COOMES, A. M., M. D., Editors.

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THE SARATOGA MEETING.

The meeting of the American Medical Association in point of numbers was not as successful as some meetings of the past, but what it lacked in numbers it made up in good work. All the sections were represented, and all did good work. The place of meeting was out of reach of many members, and for that reason the number in attendance was not as large as usual. The House of Delegates proved a great success, and it was clearly demonstrated that separating the business part of the meeting from the scientific work was the right thing to do. Next year and thereafter everything will run smoothly.

THE NEW PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION.

Dr. Frank Billings, of Chicago, was elected President of the Association. His election was a foregone conclusion long before the meeting, and it is certain that no more popular selection could have been made. Dr. Billings is not yet fifty years old, but has made his mark in the professional world in a very decided manner. When Rush Medical College was reorganized some years ago he was placed at the head of the Medical Department and made Dean of the Faculty, and as such has demonstrated his ability as a man of affairs. We are sure that the Association will flourish under his judicious management, and that there will be no regrets of his having been made its president.

THE NEW YORK MEDICAL PROFESSION.

We are told that the New York medical profession, which has been in a state of disruption lo! these many years, are to become as brothers at last, and there is to be no one hurt in the mix-up; that is, there will be no "defeat," no "victory," no "lying down of the lamb within the lion." Well, now, in the language of our old friend "Uncle Josh Weatherby," do tell us how this wonderful feat has been or is to be accomplished. It is a piece of parliamentary or diplomatic gymnastic work that we have never heard of before, and would be glad to know something definite about the *modus operandi*.

Current Surgical and Medical Selections.

THE Fourteenth International Medical Congress will be opened in Madrid, Spain, on April 23, 1903, and close on the 30th of the same month.

Dr. Abraham Jacobi, having been requested by the officers of the Congress to form the American Committee, has arranged that the plan devised by Dr. William Osler, which worked so well in preparation for the Thirteenth Congress, shall be followed also for the Fourteenth.

Invitations to accept places on the committee have therefore been sent to the president of the American Congress of Physicians and Surgeons, the president of the American Medical Association, the presidents of the fourteen constituent societies and associations of the American Congress, the surgeons-general of the Army, Navy, and Marine Hospital Service, the president of the Canadian Medical Association, and the president of the National Dental Association. Acceptances have been received from nearly all of those invited.

Dr. Howard A. Kelly, of Johns Hopkins University, will deliver the address at one of the general meetings of the Congress, and has chosen for his subject "The Passing of a Specialty."

Dr. Ramon Guiteras has been appointed delegate to the Congress by the New York Academy of Medicine.

The committee to date consists of W. W. Keen, M. D., of Philadelphia, president of the American Congress of Physicians and Surgeons; John C. Wyeth, M. D., of New York, president of the American Medical Association; R. H. Chittenden, M. D., of New Haven, president of the American Physiological Society; Walter S. Christopher, M. D., of Chicago, president of the American Pediatric Society; Joseph Collins, M. D., of New York, president of the American Neurological Association; John W. Farlow,

M. D., of Boston, president of the American Laryngological Association; Samuel A. Fisk, M. D., of Denver, president of the American Climatological Association; S. C. Gordon, M. D., of Portland, Me., president of the American Gynecological Society; George T. Jackson, M. D., of New York, president of the American Dermatological Association; Horace G. Miller, M. D., of Providence, president of the American Otological Society; Presley M. Rixey, M. D., of Washington, Surgeon-General of the Navy; F. J. Shepherd, M. D., of Montreal, president of the Canadian Medical Association; George M. Sternberg, M. D., of Washington, Surgeon-General of the Army; O. F. Wadsworth, M. D., of Boston, president of the American Ophthalmological Society; DeForest Willard, M. D., of Philadelphia, president of the American Surgical Association; H. August Wilson, M. D., of Philadelphia, president of the American Orthopedic Association; James C. Wilson, M. D., of Philadelphia, president of the Association of American Physicians; Walter Wyman, M. D., of Washington, Surgeon-General of the Marine Hospital Service, and Abraham Jacobi, M. D., of New York, Chairman.

CUTANEOUS DISEASES.—Dr. E. H. Squibb, in a paper read by title before the New York State Medical Association, October 18, 1900, states that Epicarian is the name given to a new combination produced by bringing together beta-naphthol and creosotic acid. This produces a condensation-product which has been found of value by the dermatologists. It appears in the form of a yellow powder with a reddish tinge. It is readily soluble in alcohol and ether. It has been used in the treatment of psoriasis, eczema, scabies, and other skin affections. It is recommended in the form of a ten per cent solution or a ten to twenty per cent ointment. From the successful use already noted in a limited way, undoubtedly more will be heard concerning it later.

CAMPBOR DRESSING FOR VARICOSE ULCERS—Camphor is a drug which for many years was held in great esteem, especially in extra-professional circles; indeed, the late M. Raspail founded a school of therapeutics which still rejoices in great popularity in France, based on the use of camphor internally and externally as a curative agent. Its anti-spasmodic properties, though well authenticated, have of late fallen into disrepute, or at any rate into disuse, and externally it is only employed in this country in the form of a liniment, of which it is but a subsidiary constituent. Two German physicians have recently called attention to the value of camphor dressings in promoting the cicatrization of varicose ulcers of the leg, which are notoriously refractory to treatment. They make use of an ointment containing two per cent of camphor with from fifteen to twenty parts of oxide of zinc, or if this be found too irritating they prescribe a mixture of two parts of camphor with forty parts of zinc oxide and fifty parts of olive oil. An alternative application is a solution of the drug in spirit, but this must only be applied after the ulcerated surface has been thoroughly cleaned of scabs and crusts of poultices. It is asserted that under this treatment the

most obstinate ulcer will cicatrize within three weeks, which is more than is claimed for the much-lauded oxygen treatment, over which, moreover, it has the advantage of being more generally applicable, at a vastly smaller cost.—*The Medical Press.*

PAGET'S DISEASE.—(Frederick Packard, M. D., J. Dutton Steele, M. D., Thos. S. Kirkbride, jr., M. D., *American Journal of the Medical Sciences.*) This article, jointly prepared, although brought to a conclusion by Drs. Packard and Steele owing to the demise of Dr. Kirkbride, contains a careful study of this rather rare affection, which was first described in 1877 by Sir James Paget.

The results of their studies in their own case and in the literature are arranged under two heads: (A) from the clinical standpoint, and (B) from the pathological standpoint.

(A.) From the clinical standpoint.

(1) Besides our own case, sixty-six true cases of osteitis deformans are found in the literature.

(2) Osteitis deformans is a distinct disease, of obscure etiology, but possibly allied to, although not identical with, osteomalacia fragilitas ossium acromegaly.

(3) The disease is one of later adult life. The earliest onset was in the twenty-first year of life. Of the sixty-seven cases, 61 per cent occurred in males. Trauma seems to play some part in the etiology, while there appears but little evidence for family tendency.

(4) There is a striking resemblance in the features of subjects of the disease, in enlargement and forward projection of the head, dorso-cervical kyphosis, prominence of clavicles, spreading of the base of the thorax, diamond-shaped abdomen crossed by a deep sulcus, relative increase in the width of the hips, and outward and forward bowing of the legs.

(5) The bones most frequently affected are those of the cranium, the tibiæ and femurs, and the deformity is usually first noted in the cranium and tibiæ. The left side seems to have been the part first involved; sometimes, however, the enlargement was crossed in its distribution.

(6) The association with malignant disease would seem to be not quite so frequent as is usually stated.

(B.) From the pathological standpoint.

(1) Osteitis deformans is a disease affecting the skull, vertebræ, and certain of the long bones. Its essential characteristics are:

(a) Absorption of the compact substance, causing enlargement and confluence of the Haversian canals.

(b) Formation of new bone, which runs diffusely through the affected and adjacent healthy portions. This new bone remains uncalcified and is in return re-absorbed.

(c) The conversion of the medullary substance into a vascular connective tissue containing fat cells, giant cells, and leucocytes. In a small pro-

portion of the reported cases cysts filled with the gelatinous material and giant-celled sarcomata occur in the medulla.

(d) As a consequence of the three processes the ordinary relations of the compact substance and medulla are destroyed. The bones become exceedingly thickened and asymmetrical, but since the new tissue remains uncalcified its elasticity permits of great deformity of the long bones from the weight of the body, and fractures do not occur.

(2) The whole picture of ostietis deformans, from its pathological aspect, is so very characteristic that it must be considered a distinct disease, and its pathological diagnosis correspondingly easy.

(3) The etiology of the condition is as obscure as when Paget first described it. Some predisposing tendency, probably trophic, must be assumed, and the exciting cause may be mechanical—in the skull, extremes of heat and cold, and in the vertebræ and long bones the ordinary traumata to which these bones are exposed. Lesions of the nervous system are inconstant and rare, and are probably not a causal factor.—*Montrcal Medical Journal*.

TREATMENT OF PHTHISIS BY ELECTRICITY.—(Chisholm Williams, F. R. C. S., Ed. *British Medical Journal*.) There is promised in this paper a new era in the treatment of pulmonary tuberculosis, as well as the prolongation of life to many so afflicted, without that isolation so irksome and so depressing to many such patients. Dr. Williams in a few words lays before the profession the results of his treatment of forty-three cases of pulmonary tuberculosis in the most overcrowded and unhealthy parts of London. Those who would adopt the method herein described must look further than this article for a satisfactory description of the technique, although it contains a comprehensive statement of Dr. Williams' appliances.

The cases were all picked by other medical men for the severity of their symptoms. The effects were almost without exception most helpful. Forty-two of the patients put on weight, lost all their symptoms, except in a few where slight cough remained and a few bacilli are found occasionally. After the treatment is begun the temperature is seen to rise after each application or sitting, and when the prognosis is good this reaction does not recur, normal temperature being maintained after the high-frequency currents are applied. The cough, and indeed all the symptoms, are marvelously relieved under this treatment. Attention is given to diet and fresh air as much as possible in their surroundings.

This treatment may be adopted at home and by all practitioners who have an efficient X-ray apparatus. The duration is about three months in severe cases. During the first month daily applications are made, second month every other day, and third month twice a week.—*Ibid*.

PASSAGE OF AN OPEN SAFETY-PIN THROUGH THE STOMACH AND BOWELS.—Dr. D. Edmund Smith, of Minneapolis, reports a case of this kind of more than usual interest. At the time of swallowing the pin the patient, a child nineteen months old, was suffering with severe gastro-intestinal disturbance (vomiting, intense pain, frequent foul-smelling stools) demanding abstinence from food and the use of eliminants. To adopt this course, however, would have subjected the patient to the risk of perforation. Hence it was deemed preferable to place the child on a diet of potatoes (baked and mashed), which have the advantage of acting as a protection to the intestinal walls by distending the bowel and forming a thick and soft layer around the foreign body. Owing to the existing marked intestinal fermentation the use of potatoes was contraindicated, but to overcome this objection tannopine was simultaneously administered as an antifermentative as well as astringent. Under this treatment the stools were rapidly reduced in frequency and the pains and tympanites disappeared. At the end of the seventh day the open pin, which was one inch long, was found imbedded in the rectum, from which it was removed with some trouble. Perfect recovery ensued.—*Northwestern Lancet.*

A NEW USE FOR VASELINE.—When sterilized vaseline is introduced within the tissues it undergoes no change and appears to be retained for an unlimited period. This property has been made use of for plastic purposes by Gersuny, of Vienna. In an individual upon whom a double castration had been done for tubercular orchitis, several injections of white vaseline were made, finally resulting in the formation of two deposits which were a fair representation of the original contents of the scrotum. It is not to be deemed that such a result is a rather unimportant one. In this country we have heard of one or more individuals who were made happy by the insertion of a celluloid representative of a long-lost testicle. If this is to be considered from a psychological standpoint merely, it is unquestionably of interest to behold in what strange places vanity may crop out. Not only is vanity catered for by this procedure, however. An individual suffering from a difficulty of speech after an operation for hare-lip received an injection of vaseline under the pendulous fold of the upper lip and was thus given the amount of labial resistance needed for proper articulation. It is therefore evident that the ingenuity of surgeons will find new and original uses for this procedure.

Special Notices.

"ROBINSON'S LIME JUICE AND PEPSIN" is an excellent remedy in the gastric derangements particularly prevalent at this season. It is superior as a digestive agent to many other similar goods. (See third cover page, this issue.) See remarks on their Arom. Fluid Pepsin also.

WHY COCA IS A PANACEA.—How many of our readers appreciate the true value of coca as an all-around remedy! Not cocoa, from which chocolate is made, but coca, from which that potent substance cocaine is produced. It requires one ounce of coca leaves to make one grain of pure cocaine, and that alkaloid is but one of many contained in these marvelous leaves. It is because of the modified action of all the constituents that the whole drug is possessed of different therapeutic properties and is specifically greater than any one of its parts. Coca is a nervous stimulant, acting primarily on the cerebral cells, but in this action having an elective affinity for the respiratory center and a chemico-physiological depurative influence on the blood. It is from this latter cause that coca has such a widespread usefulness, which seemingly classes it as a panacea for all ills. With a purified blood stream, the organs of assimilation and the muscular and nervous systems are not only repaired but maintained in equilibrium.

Unlike any other nervous stimulant, coca is not followed by depression, though in full doses a brief period of depression may precede its physiological action. This indicates the employment with coca of a diffusible stimulant, which after an evanescent period speedily gives place to the influence of the drug. The difference between the action of alcohol and coca is well illustrated in the anecdote of the Andean Indian, who, given a first taste of whisky and asked his idea of its effects compared with coca, replied: "Coca helps a man to live, but whisky makes him row a boat." (Mortimer's Peru: History of Coca, p. 224). Thus the combination of wine with Coca, such as in the well-known Vin Mariani, is not only purely scientific, but a commendable preparation that presents an agreeable means of exhibiting the positive merits of properly preserved coca.

ECTHOL is an American preparation made from a mixture of the fluid extract of Thuja and Echinacea angustifolia. The latter is a plant belonging to the natural order Compositæ, which grows in North America. The fresh root of this plant is in high favor with the Indians as an antidote against the bites of serpents. Dr. Stinson found that this plant promotes the flow of saliva, is a mild and inoffensive antiseptic, and, above all, an aphrodisiac. It is employed in malaria, in typhoid, and in diseases of the stomach, as well as locally in the form of an aqueous solution of the fluid extract as an aphrodisiac. In addition, it may be given internally in the form of a fluid extract or a tincture. Ecthol is said to be the most powerful antagonist of suppuration. According to Meyer this substance has a powerful effect in toxemias. Parker, Webster, Snyder, and Russell have shown that it is of great service in infectious diseases, in septic wounds, and in the bites of serpents, as well as in chronic catarrhs.—*N. Y. Med. Journal, March 15, 1902.*

I FULLY regard Chionia as an excellent remedy, and am highly pleased with its action in all cases of hepatic torpor, and can especially laud its action in many cases of sick headache. This is the first testimonial I have given in twelve years, and have absolute confidence in its physiological action.

J. B. YOUNG, M. D.

Newark, Ind.

It gives me great pleasure to state that my experience with Cactina Pillets has been satisfactory in cases of rapid, irregular heart action. I find their use most successful in controlling and relieving the cardiac pains accompanying this condition.

JAMES H. CARR, M. D.

Buffalo, N. Y.

THE
AMERICAN PRACTITIONER AND NEWS.

"NEC TENUI PENNÄ."

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

QUINSY.*

BY SAMUEL G. DABNEY, M. D.

*Professor of Ophthalmology and Clinical Professor of Otology and Laryngology, Hospital
College of Medicine, Louisville, Kentucky.*

Quinsy is an acute inflammation of the peritonsillar tissue, almost always leading to the formation of pus. The synonyms mentioned in many text-books are incorrect, as acute amygdalitis, phlegmonous tonsillitis, abscess of the tonsil, and angina tonsillaris, as they all imply disease in the tonsil itself, whereas the inflammation is really outside of it.

Etiology. It is rather more frequent in the male sex, perhaps from greater exposure. It is rare under ten (Bosworth and Casselberry say three per cent of cases under this age) and over sixty. It is most common between fifteen and thirty-five. It is most frequent in the autumn and spring.

An acute follicular inflammation of the tonsils often precedes the peritonsillar abscess. Infection frequently occurs through the space above the tonsil known as the supratonsillar fossa, across which a fold known as the plica-semilunaris runs, and sometimes drainage is thus interfered with.

Quinsy occasionally follows intranasal operations, especially with the galvano cautery. Among the local predisposing causes are chronic inflammation and hypertrophy of the tonsils and interference with drainage from the fossa above mentioned.

*Read before the Louisville Clinical Society, May 27, 1902. For discussion see page 60.

The relation of rheumatism to quinsy is interesting. Lenox Browne, in 1879, was the first to definitely ascribe peritonsillar suppuration to the rheumatic diathesis. In the latest (1899) edition of his works, however, though admitting that quinsy may sometimes be caused by rheumatism and gout, he indorses the opinion of Sir Andrew Clark, that the symptoms considered rheumatic are really due to the contamination of the blood by the sudden suppression of the manufacture of lymph cells by the tonsils, by the accumulation of effete materials in their crypts, and by the filling up of the lymph spaces with the products of bacteria.

Thus he regards the so-called rheumatic symptoms as the consequence rather than the cause of the peritonsillar abscess. This view is also held by many other investigators, among them Hare, Otto Seifert, and Wagner. The two latter have found in the endocardium, the synovial fluid, and the urine germs identical with those found in the tonsil, which they consider the point of invasion.

P. Watson Williams (1901) says the heart should always be examined and any symptoms of endocarditis noted, for valvular disease from rheumatic or perhaps septic infection may follow tonsillitis.

Bosworth, on the other hand, considers that quinsy, in nine cases out of ten, is due to rheumatism.

McBride, Bishop, Kyle, and Ballenger also look upon rheumatism as a frequent etiological factor, while Shurley doubts whether there is any relation between the two diseases. On the whole, the trend of opinion at present seems to be that the rheumatic diathesis is not a cause of quinsy, but that it is due to the invasion of septic organisms, the spread of which may sometimes produce symptoms resembling rheumatism in remote parts of the body.

Symptoms. The attack begins with fever, muscular aching, and often with a decided chill, the pain involving all that side of the neck and radiating to the ear. The dysphagia often intense; the regurgitation of fluids through the nose; the thick speech; the swelling and tenderness of the lymphatic glands at the angle of the jaw on the affected side; the difficulty in opening the mouth; the offensive breath; the stringy, tenacious mucus in the pharynx and naso-pharynx; the bulging either of the anterior portion of the soft palate or of the posterior pillar backward and downward; the edema and elongation of the uvula, most marked when suppuration has taken place, and sometimes causing cough and distress in breathing; the sallow color and the anxious countenance, present a typical group of symptoms.

There is perhaps no other affection which entails so little danger to life and yet causes such intense discomfort. The symptoms are not always so typical. In ninety per cent of the cases the pus accumulation is above and to the outside of the tonsil. Next in frequency it points in the posterior pillar of the fauces. In this event the patient can open the mouth much better than when the pus is in the usual situation, upward and forward; very rarely the pus is discharged through the tonsil itself. The usual course of the disease lasts from six to ten days; it is more tedious when pointing downward and backward.

Coakley says pus will usually be found by an incision after the third day, but my experience accords with that of Shurley, that it is difficult to strike it before the sixth or seventh.

Logucki has found streptococci and staphylococci pyogenes in the discharge, the staphylococci predominating in tedious cases.

The intense pain in swallowing, according to Hovell, may be relieved by firm pressure just in front of the external auditory meatus.

In the majority of cases only one side is involved; occasionally an attack on the opposite side follows just as the first is subsiding. When both sides are attacked at the same time the symptoms are not only most distressing but may be even alarming. In one such case in my own experience the prostration was extreme, and for several days the patient could neither speak nor swallow. He was fed by the stomach tube. The prognosis is good.

Bosworth collected reports of fifteen cases of erosion of the internal carotid artery, eleven of which were fatal. Death has also been known to follow the spontaneous bursting of a large abscess into the windpipe during sleep.

In young children in a few cases tracheotomy has been necessary on account of pharyngeal swelling, and in adults edema of the glottis has been rarely observed. In rare cases also suppuration of lymphatic glands or of the adjacent connective tissue, leading to mediastinal complication or a general sepsis, has caused death.

Treatment. A mercurial purge is generally indicated in the beginning. Salol and the salicylate of soda are the remedies commonly administered internally.

Many observers think they possess the power of aborting the disease. Bosworth recommends ten grains of the salicylate of soda with one drop of the tincture of aconite every hour until decided results are perceived in the local condition, or until gastric or other disturbance on the one hand or the tingling of the fingers and lips on the other require dimi-

nution of the dose. The aconite is of secondary importance, and is valuable only in the beginning, in his opinion.

The salicylate of soda is chiefly to be relied upon for the control of the disease; salol is preferred by many. To control the pain, phenacetin, combined with strychnia to prevent depression, is valuable, but frequently morphine at night is necessary to procure rest. In my own experience not much has been accomplished by local treatment until the pus was evacuated. Hot or cold applications externally, and in the form of gargles or cracked ice held in the mouth, are usually tried. Lenox Browne highly recommends continuous cold by the Leiter coil in the first stage of all tonsillar inflammations; he is also enthusiastic in regard to the local application of equal parts of guaiacol and almond oil, applied with a cotton mop. I have never used guaiacol, but externally the application of heat has, I think, been more grateful in my hands than cold.

Local blood-letting by scarifying the tonsil, or better, by several small punctures into the inflamed area around it, are advised by many writers, but in my hands have been ineffective. Nor can I think with Coakley that an early incision, before the formation of pus, is indicated. It is wiser to postpone surgical measures until there is a strong probability that pus is present and can be evacuated. The point of incision must, of course, be determined by the location of the pus; it is usually a little above and to the outside of the junction of the uvula with the soft palate. The incision should be about half an inch in depth; if pus is not found it is best to search further for it with a blunt probe.

In exceptional cases, as already stated, the pointing of the abscess is in the posterior pillar of the fauces. In this case also care is necessary not to wound any large vessel in opening the sac. Coakley advises pushing a little strip of iodoform gauze into the abscess sac. Usually there is no need for this or any other local after-treatment.

Sometimes I have found it useful to syringe out the sac with a mild antiseptic. Tonics are generally needed, as the patient is left much below par. The tendency to recurring attacks is to be remembered and the tonsils put in as healthy a condition as possible, hypertrophies being removed and the obstructed crypts well opened. At the same time the patient should be directed in his mode of life. Constipation should be avoided, and also dampness and sudden changes of temperature, while by attention to simple diet, frequent baths, outdoor exercise, and well-selected clothing, the tendency to taking cold should as far as possible be cured.

TREATMENT OF DIPHTHERIA.

BY J. W. PEARCE, M. D.

It is generally thought that the treatment of diphtheria is pretty well understood by the profession, and more strongly has this idea taken hold upon us since the discovery of the specific micro-organism and the institution of antitoxin in its treatment. I have nothing to say against antitoxin; I think it is good in its way. But antitoxin can not always be had, especially by physicians living in remote or rural districts, away from the great medical centers where the dazzling lights of medicine shine; and it is not always fresh even when obtained in the more favorably located sections, which is one of the most essential points in its use to insure success. Now, brother physician, picture yourself called to see a little patient suffering from diphtheria of a day's or more duration. What are you going to do? Give it that dose of antitoxin you have in your chest, which is not less than six months old, and calmly sit down and wait for the deadly disease to get in its work? Remember, you are miles and miles away from any place where fresh antitoxin can be secured, and there is no chance whatever of getting it. There is but one alternative. If you have pinned your whole faith to antitoxin, then you have nothing to do but give it and watch the little fellow die. If you have studied other remedies and other plans of treatment you will feel much relieved, and if the worse comes you will have the great satisfaction of knowing that you did all that could be done under the circumstances. Our forefathers in medicine, some of them, were very successful in treating diphtheria, and that was long before the days of antitoxin. They used a great deal of common sense and saved a great many of their patients. Now we use a great deal of theory and horse-serum and lose about as many patients. To briefly relate, this is the way I treat diphtheria, and I have never lost a case. If I can get perfectly fresh antitoxin I give it, but if it can not be had perfectly fresh I do not. Whether antitoxin is given or not, I give echol (Battle & Co.) in full doses appropriate for the age of the patient, every three hours, administered by the mouth. The entire fauces, larynx, and pharynx are sprayed with a mixture of echol and peroxide of hydrogen, three parts of the former to one of the latter, every fifteen to thirty minutes. Calomel in small doses is administered every hour until the bowels are thoroughly moved.

Nourishing and supportive diet is given at short, regular intervals, and everything done to make the patient comfortable in the way of supplying fresh air, etc. I have been using this plan, modifying it to suit the needs of each individual case, for several years, and can not recommend it in too glowing terms to my fellow practitioners, knowing that it will give good results and entire satisfaction if it is carefully and effectively administered and carried out. Nothing can save a patient *in articulo mortis*, and it is needless to try this in such cases hoping to do something. A study of these cases will be interesting:

Willie N., aged five years, healthy, robust child, of good family history. Was called to see him one morning. I found him with a high fever, constipated condition of bowels, nausea and vomiting, sore throat, etc. I made a careful examination of the throat, and covering the greater part of it was that grayish membrane characteristic of diphtheria. Microscopic examination of the exudate confirmed my diagnosis. When I informed the parents of the trouble they said there were several cases in the neighborhood. I prescribed as follows: Twenty drops of echol in small quantity of water every three hours, one-fifth grain tablets triturate of calomel every hour until the bowels moved freely, a solution of echol and peroxide of hydrogen (three to one) to be used as a spray in an atomizer every fifteen to thirty minutes, and a nourishing and stimulating diet was advised to be given at short, regular intervals, in small quantities. That evening when I called his temperature was slightly lower, but otherwise I could note no improvement. The next morning, however, there was a considerable improvement, the temperature being considerably lower than on the previous morning, when I first saw him, and he appeared very much brighter. From this time on he progressed to a rapid and uninterrupted recovery. Antitoxin was not administered in this case, as I could secure none that was fresh, but the outcome of the case was fully as good as though antitoxin had been administered.

Bessie C., aged two and a half years, well-grown, plump little girl, of a good family history. Was called to see her one night about eleven o'clock, she having been taken ill the night previous. The family was not alarmed, though she had considerable fever all the day before I called, they thinking it caused by some slight digestive trouble due to some error in diet. I found her with a temperature of 103° F., constipated bowels, nausea and vomiting, sore throat, etc., and as there were several cases of diphtheria in the neighborhood I surmised this case to be diphtheria.

On examination of the throat I discovered the characteristic grayish-white exudate covering a large portion of the fauces, larynx, and pharynx, and subsequent examination of a smear by microscope demonstrated the Klebs-Loeffler bacillus, confirming my surmise. Having fresh antitoxin, I administered it and prescribed the following: Twelve drops of echol in small quantity of water every three hours, one-eighth grain of calomel in tablet triturate every hour until bowels were thoroughly evacuated, and throat to be sprayed with a solution of echol and peroxide of hydrogen (three to one) every twenty to thirty minutes. Next morning I thought there was a slight improvement, the temperature being lower than I anticipated. On the next evening I could note distinct improvement. She progressed nicely toward recovery, which was uneventful, being complete in a few days.

Annie G., aged five and a half years, well nourished and healthy child, of good parentage. Was called to see her, whom I found to be suffering from all the initial symptoms indicative of an attack of diphtheria. There was considerable elevation of temperature, it being 102.5° F., nausea and vomiting. A careful examination of the throat revealed a small patch of exudate which was characteristic, situated on one side of pharynx, from which position it soon spread so as to almost cover the entire region of the throat. Microscopic examination revealed the specific bacillus, confirming my partial diagnosis. The treatment was as follows: Fifteen drops of echol were administered every three hours in a small quantity of water, one-fourth grain tablet of calomel was given every hour until the bowels acted freely, and a spray of echol and peroxide of hydrogen (three to one) used every fifteen minutes. No fresh antitoxin being obtainable, none was administered in this case. Twelve hours of steady treatment sufficed to show improvement, temperature being lower and the patient looking and stating that she was feeling better. In a short while all the membrane was expelled and disappeared, and she went on to an uneventful and complete recovery.

In the three cases reported above it will be noticed that antitoxin was used in one and was not used in two. As I previously stated, if fresh antitoxin could be secured it was administered, but even then I did not depend upon it entirely, but always supplemented it with the use of echol. It will also be noticed in the three cases reported above that those which did not receive antitoxin seemed to do just as well as the one which did get it. I could notice not the slightest

difference at the time of treatment, and do not believe that there was any. In a series of twenty-four cases which I have treated as above seven received antitoxin and seventeen did not. The seventeen that did not get it did as well as those that did, as far as I was able to tell. All twenty-four cases recovered, and I attribute most of the remedial effects to the ecthol, which was used in all cases throughout the entire attack.

LA GRANGE, N. C.

**A MISLEADING GUNSHOT WOUND OF THE BRAIN, CAUSED
BY A SPLIT BULLET; A CONTRA-COUP
FRACTURE OF SKULL.**

BY J. K. W. PIPER, M. D.

In selecting the following cases for report I have been influenced not alone by the fact that they seem in some respects to be more than ordinarily interesting, or at least unusual, but by the fact that many most interesting cases that terminate otherwise than as we would wish are never reported, as we are, all of us, naturally more prone to report our successes than our failures, even though success in some interesting case may have been out of the question from the start.

The first case is a misleading gunshot wound of the head. E. C., forty years of age, farmer, of good physique but of dissipated habits, received pistol-shot wound of the head. I saw him within a few minutes after receipt of the wound, at which time he was completely unconscious, not having moved after having fallen from effects of the wound. Skin cold and clammy, respiration slow and sighing (six or eight to the minute), pulse slow and weak (thirty to the minute), and pupils equally dilated.

There was a wound of entrance made by a thirty-eight caliber bullet just behind the outer angle of the left eye, and one of exit behind the ear on same side. From both openings blood and macerated brain was oozing in considerable quantities. A temporary dressing was applied and he was removed to his home, a distance of two squares, put in a warm bed and surrounded by hot water bottles, stimulated with strychnine sulphate and nitro-glycerine, and his head shaved and prepared for an operation.

* Read before the Southern Kentucky Medical Association, at Adairville, Ky., April 23, 1902.

Two hours after receipt of wound his temperature per axilla was 96° , pulse 30, respiration 6 and very irregular, and pupils unequal; left dilated and right much contracted, and brain and blood still oozing from openings. He being unconscious, it was not deemed necessary to administer an anesthetic. A large flap was turned down, exposing part of squamous portion of temporal and mastoid. An opening three fourths of an inch in diameter and two and a half inches in length was found in squamous portion of temporal, extending from before backward, appearing as though the ball, after having entered the bone, kept its course therein and destroying, almost pulverizing, it to the above extent. A number, probably twenty, small pieces of bone were removed, some from a depth of three fourths of an inch in the brain, it being necessary to trephine wound at posterior angle of bone so as to be able to get at them. A rent of two inches in length was found in the dura mater, from which brain and clotted blood were oozing. Several small vessels were cut, but had about ceased to bleed. At the time, we were unable to find the track of the bullet or part thereof leading deeper into the brain. The wound was cleaned as thoroughly as possible with boracic acid and normal salt solution. It was impossible to draw the edges of the dura together so that they could be sutured, so a three-sixteenth inch perforated soft rubber tube and sterilized gauze was introduced for drainage, the flap closed lightly with silk sutures, and the whole covered with sterilized dressings.

Almost as soon as the pressure caused by depressed bone, macerated brain, and clots were removed the patient seemed to show signs of improvement; the left arm and leg were moved more or less freely, and the right arm and leg, both of which seemed to be completely paralyzed before (responding to no irritation), were moved occasionally. While he gave no sign of consciousness during the cutting and turning down of the flap, or during the cleansing of the parts, he cried out and moved his limbs freely, especially the left arm and leg, during the introduction of the stitches. After the operation his pulse was 40, respiration 8, and temperature 97° . Pupils remained the same.

For the following seven days he showed marked signs of improvement; temperature became normal, pulse and respiration slowly increased in number to 70 and 15 respectively; intelligence improved, so that he recognized the members of his family, and he notified his nurses when he wished to urinate, but his bowels seemed to act regularly without his knowledge. During this time his temperature

was never above 99.5° . The parts had been thoroughly cleansed daily, and as the discharge had almost ceased the tube was removed and a small gauze drain left in its place at either opening.

On the ninth day his temperature was $99\frac{4}{8}^{\circ}$ and pulse 112, although respiration remained the same and pupils nearly normal, and a small amount of pus was noticed on dressings; but on the following day his temperature was normal and pulse and respiration 76 and 17 respectively. From this time patient became restless, wanting to move about the bed and get up, but with the exception of an occasional cough otherwise remained the same until the beginning of the fourteenth day, when his temperature suddenly rose to 103° , pulse 98, and respiration 25, when he lapsed into coma and died. He had lost in all, as nearly as could be estimated, between one and a half and two ounces of brain matter.

A post-mortem was held and the skull-cap removed. The dura was found to be much congested, the vessels engorged with blood of a very dark color. The brain was removed with difficulty, owing to adhesions formed between the dura and the skull. The rent in the dura extended two and a half inches from before backward, and the upper and lower edges were separated fully an inch. The dura was removed and a lacerated wound of arachnoid and pia mater found, beginning half an inch behind the posterior angle of wound of dura (not having been in sight during operation) and extending two inches backward, the outer surface of the second temporal and middle occipital convolutions being wounded. On following the wound inward toward the falx cerebri it was found to extend into the cuneate lobe, where was found a large pocket of pus; and in the wall of the abscess, half an inch behind the posterior occipital fissure, within half an inch of the falx cerebri, was found almost exactly one half of the ball, the ball originally weighing one hundred and forty-six grains and the fragment weighing seventy-four grains. The bullet, in its passage virtually through the two and a half inches of bone, had worn itself in two, one part coming out through the skin, the other going off at a tangent into the brain.

In this case the piece of ball that came out could not be found, but it proves the necessity of making strict search for the ball that passes through bone to learn, if possible, whether or not any of the ball remains. Had the part of the ball that made exit been found, a stricter search for the missing part might have been justifiable, but even had it been located it would have been very difficult of extraction. The fact that

marked improvement began immediately upon the removal of the pressure caused the operator to think the whole ball had made exit.

Contra-Coup Fracture of Skull. J. B., twenty-seven years of age, in perfect health and of good physique, during an altercation was struck on the left side of the head with a two-gallon wooden water-bucket, about 9 o'clock P. M. The blow felled him and rendered him momentarily unconscious (unconscious about two minutes), after which he was able to get up with a little assistance, and in a few minutes was able to walk fairly well, but with a slightly staggering gait and uncertain step. He complained of pain all over his head and of dizziness, both of which symptoms, however, lessened materially; but in the course of an hour the headache increased and was accompanied by a throbbing sensation on right side of head. He then walked three squares to a drug-store and obtained some morphine tablets, one or two of which he took, and then walked about the same distance home. During this walk he seemed to use his left leg with more or less difficulty, at first slight but later more marked—dragging it when stepping—and later complaining of a sense of undue weight and “tired feeling” in it, as well as in his left arm, which condition seemed to be increasing, as did also pain and sensation of throbbing in right side of head. He laid down, and during the following two hours he took several doses of morphine, and finally, about one o'clock, seemed to friends who were rooming with him to doze off into a rather restless sleep, frequently throwing about his right arm and leg, but keeping those of the opposite side rather quiet. Sleep finally became deeper and restlessness less, but owing to his unnatural breathing and the inability on the part of his roommate to arouse him I was called about half past two o'clock.

On examination I found a large bruise extending almost all over the left side of head and face, well down on jaw. He was unconscious, but at times moved right leg and arm, while those of opposite side remained quiet, nor would they respond to any irritation, but “dropped dead” on being raised and let go of. Respiration Cheyne-Stokes, rhythm slow and noisy, restricted on left side, and accompanied by stertor and blowing out of cheeks, especially left one; temperature below normal; pulse slow and full. Coma increased and became profound; face assumed an ashen-gray hue; pulse became weak and rapid, and patient died just after a slight convulsion, at half past three o'clock.

At post-mortem the skull-cap was removed in the usual manner and the brain carefully taken out, when there was found a large meningeal

hemorrhage on right side, a clot measuring three inches in diameter and half an inch thick in the center almost completely filling the middle fossa and extending well up on side between dura mater and bone. On removing the clot a stellate fracture was found, with five ramifications radiating from a point in the temporal bone near its juncture with the posterior angle of right wing of sphenoid, one ramification two inches long extending into sphenoid near foramen spines, causing a rupture of the middle meningeal artery, from which came most of the hemorrhage; one extending into petrous portion of temporal, and three extending into squamous portion of temporal. There was a hemorrhage about an inch square between the dura mater and arachnoid, extending over the fissure of Sylvius.

The post-mortem, besides being more than ordinarily interesting, was deemed necessary from a medico-legal standpoint, to learn whether or not the "morphine" had had anything to do with his death.

RUSSELLVILLE, KY.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, May 27, 1902, the President, William H. Wathen, M. D., in the Chair.

Tumor of the Tongue. Dr. M. F. Coomes: This specimen is a tumor removed three weeks ago to-day from the tongue of a woman twenty-three years of age. The patient was born with this defective tongue, the left half being occupied by this growth. It had given her no particular trouble until a year and a half ago, when it began to grow, become painful, and there was some swelling and bleeding from the tumor. The growth was easily removed without hemorrhage by applying clamps. The wound has healed perfectly, and there has been no further trouble.

Discussion. Dr. William Cheatham: I have seen several cases of congenital tumors of the tongue similar to the one before us, except that they were smooth and not rough like the one presented. I removed one some years ago from a girl eighteen years of age which was much larger than the growth shown by Dr. Coomes; in fact, it had gotten so

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

large as to interfere seriously with deglutition ; it would get down into the throat, and the girl was always trying to swallow it. It was removed without hemorrhage, with a snare.

Dr. J. R. Wathen: A word or two in regard to the pathology of this growth: Dr. Coomes being out of the city at the time, this woman's physician brought her to me to pass upon the pathology of the tumor. I told him from the history of the case and appearance of the growth that it must be a benign papilloma. As no microscopical examination has as yet been made, of course we are unable to state the exact nature of it, but the time it has been in existence would be largely in favor of its being a benign growth. With the naked eye the appearance of the tumor was much redder than the balance of the tongue, but under a small lens there did not appear to be much difference in the structure.

Dr. M. F. Coomes: The tumor was about the color of the tongue, and its macroscopical appearance did not differ materially from that of the normal tongue except that the papillæ were larger. The tumor has shrunk very much in alcohol, and the pallor that is now observed is due to the fluid in which it has been preserved.

Report of Surgical Cases. Dr. William H. Wathen: I have had a series of interesting operative cases during the last week, most of them capital operations, and will exhibit the specimens and briefly report a few of them.

This specimen was removed from a woman thirty years of age, at St. Anthony's Hospital. She had been operated upon a year ago by a Louisville surgeon who did a laparotomy, removing one ovary and tube. Following the operation there was extensive suppuration of the abdominal wound and a great scar was left; she had suffered more after the operation than previously, and had extensive omental and intestinal adhesions, as were diagnosed from the symptoms present. A laparotomy was performed, the eschar, which was causing pain from pressure upon nerve filaments, was removed, and the omental and intestinal adhesions were carefully separated. This ovary was found as large as a turkey egg, adherent to everything in that locality, and so diseased that its removal was necessary.

This represents a class of cases that we not infrequently see, where a surgeon operates, does unclean work, uses a drainage-tube, or has extensive suppuration in the wound, either one of which will result in symptoms which make the woman's condition worse than before his

operation. This patient will make an uninterrupted recovery, and will, of course, be relieved of all symptoms.

In this connection I will report a similar case referred to me the other day by Dr. Bohannon, of Greenville. The patient had been twice operated upon by a Louisville surgeon. In the first operation he removed both ovaries and tubes; in the second operation, as the woman was suffering from adhesions and a retroverted uterus, he claims that he separated the adhesions and sutured the uterus anteriorly.

I found her suffering intensely from what was evidently omental and intestinal adhesions to the abdominal wall, with the uterus thrown back into Douglas' pouch and adherent, with a large scar, also the result of extensive suppuration following the use of a drainage-tube, which is almost universal. Her condition was such that it was deemed impossible to cure her except by laparotomy, with removal of the eschar, separation of the omental and intestinal adhesions, removal of part of the omentum and removal of the uterus, which was a worthless organ and adherent, and was so small that it could not be sutured anteriorly. It was causing serious trouble, and the patient could not be relieved without its removal. After both the previous operations the patient vomited almost continuously for perhaps a week, and her recovery was very protracted. She has had no vomiting since the recent operation and will make a complete recovery.

This case, together with the preceding one, I consider of especial interest, because it illustrates the necessity of never using a drainage-tube unless you put it into a pus cavity. Quit draining, quit tamponing with gauze, and under no circumstances irrigate the cavity, but wipe it dry. Irrigation can do no possible good, and may do harm by diffusing septic matter throughout the abdominal cavity.

Here are specimens from a case that was diagnosticated as a large pelvic abscess. I did not see the woman until the morning of the operation. I examined her and put her upon the operating-table, and then found there was no pelvic abscess, but the uterus was retroverted completely and adherent to everything; she also had salpingitis, with the ovaries and tubes adherent.

I did a laparotomy and found the tubes so diseased that they could not be saved; the ovaries were comparatively healthy and were not disturbed; the uterus was separated from its adhesions and sutured to the anterior abdominal wall by a medium-sized silk suture, the posterior part of the fundus being attached to the anterior abdominal wall,

including in the suture not only the peritoneum of the abdomen but a little of the fascia and muscle also. Kelly claims we should not include anything but the peritoneum in the suture. I have for a long time maintained that where only the peritoneum was included in the suture, by the elongation of this strip of peritoneum the uterus may finally assume its former retroverted position. While there is perhaps a slightly increased danger to the woman by including a small portion of the fascia and muscle if pregnancy occurs, I think it is better to take the chances in all cases, and especially where the ovaries are removed and there is consequently no danger of the woman becoming pregnant. I have operated upon many cases, stitching the uterus to the anterior abdominal wall as indicated, and no trouble has followed during subsequent pregnancy.

Here is a specimen to which attention is especially called, the uterus being five inches deep. One ovary and tube were removed and the other left, purposely. This woman had had complete procidentia for many years, with an enormous vagina. Nothing would promise relief except total extirpation of the uterus. Anterior fixation would not have given satisfaction in this case. I have had a number of these cases and have found that they have all made excellent recoveries and have remained well thereafter. I operated in this case by taking out the uterus, pushing the vagina upward and tamponing tightly, and will keep the gauze in for ten or twelve days, and finally the upper part of the vagina will close by extensive granulations. If you suture this with catgut, you will find that immediate union will take place but the tendency to prolapse will return; and for that reason we find those men who have been suturing have had bad results, and some of them, like Edebohls, of New York, have resorted to extirpation of uterus, ovaries, and vagina, which is a very radical operation, and one which few people will consent to.

The next case was referred to me by Dr. Marshall, and we operated upon her one week ago yesterday for a uterine myoma by laparotomy, removing the entire uterus, cervix, etc. I do not believe we ought to leave the neck of the uterus in operations for myomata, because the patients do not do so well after the operation, and no good can possibly result from leaving the cervix. Again, perfect drainage can not be secured when the cervix is left, and when it is removed the patient has no fever or excitement of pulse following the operation after the immediate shock is over. This has been so marked in some of my

cases that the nurses have remarked to me that the patients do much better where the entire cervix is removed.

The next specimen is an ovarian tumor removed from a lady from Indiana referred to me by Dr. Funk, operation last Thursday. The history was that she had suffered from this tumor for years, but it had given her but little trouble until recently. She was referred to me two weeks ago, as I supposed for operation; but when I told her to go to the infirmary she said she wanted to return home and consult her father. She returned to the city last week, and the operation was performed. I first thought it was a parovarian cyst, but in view of the fact that she had lost considerably in flesh I was rather suspicious of the diagnosis; her physician, however, had diagnosticated ovarian tumor, and I finally agreed with him.

I opened the abdomen and introduced a trocar into the cyst and found the contents as black as tar. Upon drawing the tumor into the wound it was found that portions of it were almost rotten. An ordinary forceps would tear holes in it, and evidently the reason this woman had lost so much flesh was because of degeneration of this tumor. I am confident that in a few months more there would have been rupture and leakage into the abdominal cavity and death of the patient. The woman has done well since the operation, and we expect her to make an uninterrupted recovery. It is a typical ovarian adenoma.

The next case was operated upon this morning, and is quite an interesting one. A woman, sixty-five years of age, was visited the other day at the request of one of our bankers here by my son, who diagnosticated carcinoma of the pyloric extremity of the stomach. I visited her subsequently and confirmed the diagnosis, and although she was very feeble she insisted upon immediate operative intervention, knowing that it would at best give only temporary relief, and that it was a dangerous operation.

She was operated upon by making a median incision one inch to the left of the ensiform cartilage down to the side of the umbilicus. The stomach was readily exposed and there was found carcinomatous involvement of the pylorus, with almost total obstruction of its caliber, but the rest of the stomach was healthy. The woman was so feeble that posterior gastro-enterorrhaphy would have been out of the question; in fact, I am of the opinion that in these cases we had better always make an anterior operation as the one of election. The colon was pulled up along with the omentum, and by reaching in with the fingers just to the left of the spinal column, under the colon, you will

always find the jejunum; this was pulled up, and eighteen inches to two feet from its origin it was attached to the stomach, bringing the afferent coil over from left to right and fastening it to the stomach, so the efferent branch would go down on the right side, being careful to bring a loop large enough not to contract the colon or omentum and interfere with the function of these structures.

The operation was performed after this fashion: An oblique incision through the peritoneum of the stomach from left to right was made; the convex surface of the jejunum was incised in the same manner; then about half an inch from the edge of the opening thus made sero-serous sutures going through the peritoneum and muscular structures into the connective tissue between the muscle and the mucous membrane were introduced entirely across the opening; then the wound was made through the wall of the bowel and the stomach, and the edges of the immediate wound below sutured by a direct continuous suture reduplicated, after a method I have recently devised, each second suture locking the other; then the sero-serous sutures were brought together and the anastomosis completed by a strong suture bringing the edges of the immediate wounds together.

In order that there might not be a vicious circle here, and to prevent the passing of bile and pancreatic juices up through the afferent branch into the stomach to be regurgitated, with possibly the contents of the stomach because of some false peristalsis in the efferent branch because of the short part of the jejunum and the duodenum being filled, which would cause death, an anastomosis was made about eight inches below the anastomosis of the stomach between the jejunum.

The anastomosis was made by a Murphy button supplemented by suturing all the way around, using silk, not catgut; probably catgut might be better in some instances. The woman had no shock, and her temperature and pulse after the operation were the same as before. We hope she will make a recovery.

Discussion. Dr. T. P. Satterwhite: I would like to ask Dr. Wathen what he would advise in a case where there is a pronounced retroversion of the uterus, with some prolapsus; whether he would advise anterior fixation or entire removal of the uterus. The patient is a woman about thirty-five years of age and unmarried.

Dr. H. N. Leavell: In regard to ventro-fixation: I notice in an article in the Practical Medicine Series, the volume edited by Dr. E. C.

Dudley, of Chicago, that it seems ventral fixation has received a black eye; that it is not believed now that this operation is as efficacious as was formerly thought; that cases are reported where the women have suffered a great deal of trouble in pregnancies subsequent to ventral fixation, not only miscarriages but interference with development of the uterus; it seems after ventral fixation there is a thinning of the uterine wall, predisposing to rupture of the uterus, and in addition there is a dragging sensation on the abdominal wall.

I was particularly interested in the doctor's graphic description in regard to the use of the drainage-tube. I have used it in a few instances, and have always been more or less disappointed. The question always arises whether or not to drain; if the serous discharge is considerable, we are in doubt whether the peritoneum will take care of it. We know that the peritoneum will take care of a large amount of serum and no septic condition will arise therefrom.

I remember a case I operated upon last August in which I used a drainage-tube, leaving it intact for thirty-six hours on account of extensive adhesions and very large pus-tubes, probably one and a fourth inches in diameter, so large in fact that in tying them off I had to suture twice in order to control bleeding. I used a drainage-tube, and about four weeks afterward this patient developed a sinus which has been discharging ever since; about a month ago some fluctuation was detected in the vagina near the cervix, and I made an incision into Douglas' cul-de-sac and evacuated some pus. A drainage-tube was put in through this opening, which has resulted in considerable relief, but there is still a slight discharge from the old sinus, and it will probably be some time before it will completely heal. I believe this sinus primarily was due to infection from the drainage-tube.

Dr. W. H. Wathen: The case reported by Dr. Leavell is an interesting illustration of the evil resulting from a drainage-tube. The drainage-tube caused infection of a ligature, the ligature is still there, and the wound will never heal until it is removed. The ligature will never disintegrate and pass away because it is silk; if catgut, it would probably do so. I have never yet failed to get out one of these ligatures without operation, with but a single exception, and the sinus will never heal until it is removed. I have gotten them out by taking a catheter and pushing it down to the ligature, then with a strong syringe sucking the ligature into the eye of the catheter. Next I had a little instrument made, about eight inches long with a very fine hook at the

end, and with this instrument I have many times fished out a ligature. But now I have a still better means; I have a little instrument similar to those used by the throat men, alligator shape, that goes down deep into the cavity, with an opening near the end which fishes out the ligature better than anything I have yet seen. Recently a woman was brought into the clinic at the Kentucky School of Medicine and put on the table; she had a discharging sinus from an old laparotomy wound. I said to the class that this woman has had a laparotomy performed, she had a drainage-tube used, and from the appearance of the wound I judge there is an infected ligature at the bottom of the sinus which will prevent healing until removed. I reached in with the little instrument last described and fished up a bunch of ligatures as large as my finger, and the woman in a few days was well. Nearly every one of them will get well in from a week to ten days after removal of the infected ligature, I do not care how long they have been sick. Silk is encysted, but never absorbed, and when once infected it will never cease to cause suppuration. The only suture that I have ever seen that will cause infection around it, then finally become encysted and heal over, is the silver wire.

As to trouble following pregnancy after ventral fixation: I have studied this question carefully, and there are cases recorded showing that the uterus has gotten into all kinds of shapes following ventral fixation where pregnancy has ensued. This is where Kelly makes his point that you ought not to include anything but the peritoneum, so the uterus after a few weeks will fall away from the abdominal wall with a band connecting it; but the danger is if you only include the peritoneum that the uterus will finally fall back into its original abnormal position. If you will include a little of the fascia and muscular tissue, you will hold the uterus in front, and still there will be traction backward sufficient to prevent any danger following pregnancy. The danger following pregnancy is first abortion, and there have been a number of instances of abortion reported; second, the danger of the uterus being pulled down and incarcerated in the pelvic cavity and causing injury from pressure; third, that it may ascend in an abnormal position and at full term cause difficulty in labor and possible rupture of the uterus. As far as I have studied these cases complications arise in not to exceed three to five per cent. Kelly, who has studied this question more carefully in all probability than any other man, and who has also done more fixations, still adheres to it as firmly as ever.

I have studied every operation that has been devised for the purpose of correcting a retro-placed uterus—anterior fixation, the Alexander operation of shortening the round ligaments, by laparotomy and suturing the broad ligaments together and so shortening them, or bringing them over in front, or making a slit in the uterus and fastening them there by this means, by separating the vagina and bladder from the uterus anteriorly and bringing the round ligaments together and suturing them and then closing the wound. I have contended until two years ago that the vaginal method of shortening the round ligaments was the best procedure for correcting a retro-placed uterus; but upon further investigation it has been found that after any vaginal method of shortening the round ligaments, as a rule a large uterus, without strong broad ligaments, will fall back into its original place.

Where you practice anterior fixation, if you suture it properly, the uterus can not fall back.

In answer to Dr. Satterwhite: As the patient is an unmarried woman, and probably expects to get married and will want to bear children, I would not remove the uterus unless it became absolutely necessary, but would try other methods.

You might ask why I did not use a large Murphy button in the gastro-enterorrhaphy: Because it has been proven a very unsatisfactory method, the button nearly invariably dropping into the stomach and remaining there, requiring another operation for its removal.

The essay of the evening, on "Quinsy," was read by Samuel G. Dabney, M. D. [See p. 41.]

Discussion. Dr. M. F. Coomes: Quinsy is perhaps the most unsatisfactory thing with which we have to deal. There are three points to which I wish to call especial attention: First, I have never been able to connect peritonsillar abscesses with rheumatism; second, I would rather go against one of these slot machines and try to play for four aces than to attempt to get pus out of one of these abscesses; third, when I have a peritonsillar abscess and suspect pus I first use cocaine and insert an aspirator needle; if I do not find pus I generally quit there; if I find pus, I leave the needle in place and insert my knife, using the needle as a guide, making a free opening.

I received to-day for review the new book by Gradle; he devotes just thirty lines to the consideration of peritonsillar abscess. He says

they are pyogenic in origin, which I believe is true, and that the indication is to let out the pus, which about covers the whole ground. I am fully in accord with what Gradle says. I believe in cases of follicular tonsillitis the surface of the tonsil becomes covered, and in this way the pyogenic germ is forced into the crypt and there finds a proper nidus and abscess is developed. Aconite frequently relieves the pain in these cases, just as it will relieve pain elsewhere if carried to the physiological point of tolerance.

Dr. William Cheatham: I have some little faith in the abortion of these cases. Especially if a patient is subject to recurrent attacks of quinsy, he will soon recognize the first symptoms, and if you then give him a calomel purge, administer aconite and belladonna, the disease may be aborted. I am sure I have accomplished this in a good many instances. I remember one patient who was under my care for quinsy several years ago, and has since written me a number of times, even from Europe, for a copy of a prescription I had given him for aborting quinsy. It was protiodide of mercury and belladonna. When he keeps this medicine on hand, to be taken when the first symptoms are observed, he has been able to abort the disease frequently. When he gets out of the medicine and treatment is not commenced sufficiently early, he is sure to have an attack of quinsy. So I am sure we can in some instances abort the disease.

My experience has been where the pus is allowed to escape of itself, unless it empties down about the angle of the jaw it empties through the fossa above the tonsil. Some operators have suggested opening the fossa and cleaning it out.

I have had a case with Dr. Boggess recently, a woman with double quinsy. Since she has gotten well I have taken out the upper part of the tonsils, with the hope of preventing attacks of quinsy, which she has been having about twice a year.

One point the doctor did not refer to in his paper that may be worth mentioning is that I have seen on a number of occasions two or three members of one family affected with quinsy at the same time. In one instance the husband and wife were both in bed with quinsy at the same time. I had another family in which three persons were sick with quinsy at the same time.

I usually make my incision not very deep, then go in with forceps instead of a blunt probe, making a good-sized opening, and seldom fail to find pus. I have had quite a serious hemorrhage occur in one case.

I lanced the abscess and hemorrhage continued for an hour and a half; it seemed to be venous; just as I had gotten ready to pack it with iodoform gauze bleeding ceased.

Dr. T. P. Satterwhite: Referring especially to the treatment: Being connected with the School of Reform, I see a great many children with quinsy and tonsillitis. My course of treatment is a calomel purge and salicylate of soda or salicylate of quinine. They have all gotten along very satisfactorily under this treatment.

I would like to ask Dr. Dabney if he has ever noticed that the pus from quinsy burrowed downward, going into the thorax. I remember several years ago I thought I had lost a patient from this cause. I neglected to open the abscess, the pus disappeared, the tonsil collapsed, and I know of no other way to account for it except that the pus went down into the thorax, as the patient developed considerable thoracic trouble.

Dr. M. K. Allen: One point that Dr. Dabney did not mention in his paper is the difficulty sometimes encountered in getting the patient's mouth open sufficiently wide to get at the peritonsillar abscess and evacuate it. I have noticed this in several instances, it being impossible or very difficult to get to the abscess.

Dr. J. R. Wathen: In connection with evacuating peritonsillar abscesses, I would like to mention a case that Dr. Coomes saw in consultation with me about two years ago, in a young man twenty-six years of age. He had an immense abscess on one side; we introduced a bistoury into the tonsil on two occasions, but did not find any pus; we introduced a large aspirator needle twice, but no pus was found; finally, twisting the needle a little and introducing it in another direction, we managed to get an immense quantity of pus. The tonsil collapsed, and the man made an uninterrupted recovery.

Dr. P. F. Barbour: I suppose, like most other general practitioners, I have seen a good many cases of quinsy, and hate the sight of these cases because there seems so little that we can do for them. I know it is advised that we evacuate the abscess, but not being a specialist in throat troubles I always feel a little hesitancy about probing around to find pus in this situation. In one case, seen while I was still young in the practice of medicine, the pus burrowed upward and discharged outside of the lower wisdom tooth.

I have usually treated these cases on the plan mentioned, the use of calomel and the salicylates to relieve the pain, which they do in the

same way that they relieve the pain of rheumatism, by its action on the peripheral nerves, not that quinsy is rheumatic in origin.

I would like for Dr. Dabney to explain why it is that children are so free from quinsy; they certainly have enough of other troubles about the throat, tonsillitis, extension of inflammation from the pharyngeal wall to the tonsil, follicular tonsillitis, diphtheria, etc., and it would seem they should be more apt to have quinsy than the adult. I have seen few cases in children under the age of ten years. Dr. Pfingst reported two cases in children under five years of age a few years ago, and stated that it was quite infrequent.

Dr. H. N. Leavell: I have seen a good many of these cases. I am glad that Dr. Allen mentioned the difficulty which we sometimes meet in getting the mouth open. It is almost impossible to do anything without the mouth-gag in these cases, getting it between the teeth and then suddenly pushing the jaws open. It is painful, it is true, but it is impossible to do anything unless you can get the teeth at least half an inch apart. I believe we sometimes make a mistake in using a knife which is too short. A long knife wrapped with cotton to one half inch of point is best suited to the purpose of opening these abscesses. With a long, sharp-pointed knife introduced in the situation Dr. Dabney describes I have been disappointed in getting pus only on two occasions, and in these two cases I believe they were opened too soon. These are the cases that are aborted; they have never gotten beyond the congestive stage; there has not been the formation of pus. If quinsy is to be described as peritonsillar abscess, and by that we mean pus, then I do not believe that quinsy is ever aborted. I think we make a mistake in trying to go through the tonsil to find pus; the spongy tissue of the tonsil makes the abscess harder to evacuate.

Dr. J. W. Irwin: We all meet with tonsillar disease, and quinsy is more or less common and is seen by the general practitioner perhaps as often as by the specialist. There are many cases that are not of sufficient gravity to call in a specialist, and we are forced to treat them. In those cases where suppurative tonsillitis recurs we have the best opportunity of observing the condition of affairs.

The first evidence, as Dr. Dabney has stated touching the question of the causation of the disease, as stated by Lennox Browne, is that it is rheumatic in the great majority of cases. It is very hard to tell just what part rheumatism plays in the production of tonsillitis, but that it does play some part, directly or indirectly, there is no doubt. We know

there are certain people who will not take cold under certain kinds of exposure; we know there are others who under the same sort of exposure will take cold readily. This question has been recently investigated to this effect, that persons predisposed to rheumatism, to gout, to lithemia, or to rheumatic deformans are peculiarly liable under any kind of exposure to take cold. Taking cold then in these cases seems to play an important part. Catarrhal conditions are far more prevalent in persons so predisposed than in those who are not. Evidently in many cases we must assume that tonsillitis is a catarrhal affection, and those predisposed to tonsillitis are those who have a rheumatic dyscrasia or gouty tendency—these are the subjects who are particularly prone to have tonsillitis. Hence there must be something in the rheumatic idea, as in those people who have recurring attacks you will find a rheumatic or gouty history in a great many instances. In other cases you will find some nervous derangement; perhaps you will find, too, if you trace the history of the case back two or three generations, there was gout or rheumatism in the family.

Touching the question of treatment: I believe the disease can be aborted. I have been able to prevent the formation of abscess where it had previously formed, and where abscess subsequently formed without any abortive treatment. I think this would be positive proof so far as one man's experience can go. I meet with a good many of these cases, and believe like the others who have spoken that calomel is the most important thing to give at the start. As soon as you find the patient has tonsillitis, give him a large dose of calomel—not small doses to be repeated at intervals of an hour or half hour—but give six to ten grains, with eight to ten grains of rhubarb, and after this dose you will find that you have put the first nail in the coffin, so to speak, of that suppurative disease known as tonsillitis. If you will then follow it with a prescription as follows: Spirits mindererus, one half ounce, and one sixteenth grain of tartar emetic every two hours, you will find you have aborted the disease before suppuration has taken place, but if suppuration exists you can not expect to abort it. This is why you can not abort the disease in every case. Any time within eighteen hours after the disease has set in this treatment has always proven successful in aborting it.

I believe that rheumatism, or gout, or lithemia, or rheumatic deformans, either immediately or more or less remotely, always tends to tonsillitis, being one of the greatest predisposing causes.

Dr. Carl Weidner: The ground has been so well covered by the essayist and the gentlemen who have already spoken that there is little left to be said. My experience has been that in most of these cases there is a chronic pharyngeal catarrh; that the tonsillitis has a marked tendency to recur. We should try to guard the patient against recurrences by thorough attention to asepsis of the throat, because I think Dr. Dabney is right in his explanation of causation of the pus formation itself—accumulation of bacteria in the deepened crypts.

Dr. W. F. Boggess: I am sure Dr. Dabney could not have selected a subject of greater interest to the general practitioner than that of suppurative tonsillitis.

As to the abortion of these abscesses, I am sure that I have been able to abort them in some cases. I ordinarily give a prescription for belladonna, aconite, and the red iodide of mercury, to be taken in small doses every two or three hours; I have sometimes painted them with ichthyol solution, and am sure aborted them by this means.

I see a great many of these cases, as I am sure every general practitioner does, and like Dr. Barbour I am sorry when I find them.

I do not agree with Dr. Coomes that you seldom find pus, because after three days it has always been my custom to call in a specialist and he has never failed to find pus in a single case. You do not get it by simple incision; rarely do you see pus obtained by simple puncture of the peritonsillar tissue; but my experience is that you have to make a free incision half an inch deep and then go in with forceps and spread open the tissues, and a pocket of pus is always found, which can then be easily evacuated.

I use the salicylates and other remedies in these cases frequently. I generally combine iodide of potassium, salicylate of soda, and convallaria. It lessens pain and makes the condition more endurable. I do not know that this treatment has any abortive power, but it certainly relieves the condition of the patient.

In follicular tonsillitis the salicylates are a specific, not that it is rheumatic in origin, but it is a septic condition, an infectious disease, and if you will give sufficiently large doses of salicylate of soda you will quickly get rid of the constitutional symptoms of follicular tonsillitis. We have rheumatic symptoms in many of the infectious diseases, we have joint symptoms, muscular soreness, muscular pains, etc., in many affections, and salicylate of soda will relieve them, but this is no proof that they are of rheumatic origin.

Dr. S. G. Dabney: I am obliged to the gentlemen for their generous discussion of the paper. I think the man who first called attention to and emphasized the importance of the little space known as the supratonsillar fossa was a German by the name of His, in 1886. A paper was read last year before the American Rhinological and Otological Society by Dr. Hartz, of Detroit, in which he laid great stress upon invasion of the peritonsillar tissue through this space from defective drainage. Of all the crypts, as they are called, in the tonsil the one just above the tonsil is probably the most frequent source of infection.

It occurs to me that perhaps the explanation of two or three cases of quinsy in a household, in people who are not themselves of the same family so far as blood relation is concerned, is the fact that follicular tonsillitis is undoubtedly communicable. I think it probable that this disease is often the source of infection that gives origin to quinsy. I would suppose that in the cases referred to by Dr. Cheatham one of the patients acquired follicular infection from the other, and both had quinsy as a secondary infection from that.

I use narrow forceps with a long handle and long blades usually after I have struck pus, for enlarging the opening. I have seen three or four cases of quinsy in the child, probably more than my share, as Bosworth states that he found only three cases in children out of a total of one hundred and thirty-five cases. Other statistics show that about three per cent of cases occur in children under ten years of age; on this basis a person would have to see several hundred cases to find many of quinsy in the child.

Referring to Dr. Allen's remarks: It has often seemed strange to me that the general practitioner did not use the head mirror more frequently in making his examinations. It does not require much skill or technical training to be able to use it, and it is of immense assistance in these cases. You can see through a much smaller opening than without it.

I referred in my paper to the pus of quinsy burrowing into the mediastinum, and several deaths have occurred from this cause.

Dr. Barbour spoke of being afraid to cut for pus in peritonsillar abscess. The operation appears a simple one, yet I am like Bosworth, who says he never opens a peritonsillar abscess without some uneasiness. I always fear hemorrhage; I have never seen any hemorrhage following the operation, yet in the very next case I may have it. Some chances are undoubtedly taken in opening these abscesses, and that is why we always wrap our knife with cotton up to within half an inch of the point, so as not to open them too deeply.

Like Dr. Boggess, I believe that because the salicylates relieve the pain in quinsy is no proof that the disease is rheumatic in character.

Referring particularly to the remarks of Dr. Barbour: We have one or two reasons in explanation as to why quinsy is so rare in childhood. One is that children are very much more likely to have disease of the epithelial structures, while adults are prone to have disease of the fibrous structures of the body. The epithelial tissues of the child are particularly prone to become diseased. Another explanation, I take it, is that the tonsillar crypts in the child are not so apt to be the seat of chronic disease; children have enlarged tonsils, but we do not so often find chronic follicular inflammation closing up the crypts in the child as we do in grown people, although I have seen several such cases in children.

I generally use the Graefe knife in making my first incision; pain is greatly lessened by having a sharp knife, of course.

Referring to Dr. Irwin's remarks: Quinsy ought not to be designated as a suppurative inflammation about the tonsil, nor even as peritonsillar abscess, because a good many cases certainly do not go on to suppuration. It is a peritonsillar infection with a strong tendency to the formation of pus, but it does not always form pus. The cases Dr. Irwin spoke of I would hardly designate under the nomenclature of suppurative tonsillitis; I think the term is a very unfortunate one. It is the rarest thing in the world that we find a suppurative tonsillitis. It would be desirable to avoid the name suppurative tonsillitis. It is not an adequate description of the disease under consideration. Many acute tonsillar troubles quickly subside under various methods of treatment without the development of a true quinsy, and it is a mistake to call these cases quinsy, nor are they cases of suppurative tonsillitis, because the process subsides without the formation of pus. Sometimes in these cases there is decided swelling of the peritonsillar tissue, and because this subsides under treatment we are inclined to claim that we have aborted quinsy, whereas the condition in the first place was not one of quinsy.

My experience is that typical rheumatic throats are those where the objective symptoms are exceedingly slight; there is not marked redness or inflammation, yet the patient complains of decided pain. People with rheumatism complain of much more pain in the throat than the appearance of the inflammation in the throat would indicate. Where there is marked inflammatory disturbance about the throat I think the condition is almost certainly bacterial, rarely rheumatic.

P. F. BARBOUR, M. D., *Secretary.*

THE LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, June 17, 1902, the President, William H. Wathen, M. D.,
in the Chair.

Multiple Fracture of the Leg, with Extensive Laceration of the Soft Parts. Dr. Ewing Marshall: This boy is fifteen years of age. On the 9th of April, 1902, he fell through an elevator shaft, a distance of forty feet, striking two or three objects in his descent. He sustained an extensive laceration of the outer aspect of the left thigh, considerable tissue being torn away, with a fracture of the femur above the point of laceration. It was not a compound fracture. The fractured ends of the bone were approximated and the laceration of the soft parts brought together and sutured. He also sustained a fracture of both the tibia and fibula about three inches above the ankle, with an extensive laceration of the soft structures extending down to the middle of the tibia and exposing the tibia for about an inch, but not connected with the fracture.

There was considerable deformity when I first saw him and the question of treatment was an important one. I put on Buck's extension apparatus, which was kept on for ten days; then the leg was put in plaster. He can now walk without crutches, and it has been two months last Monday since the injury. I simply brought the patient here to illustrate the satisfactory result obtained. The fracture was not compound in either situation. The laceration below the knee has entirely healed, while that of the thigh has healed except it has not skinned over.

Minor injuries also presented back of the knee and on the left foot. At first I thought there was a partial dislocation of the bones of the foot, but if this was true the dislocation was perfectly reduced by manipulation, as motion is now perfect. You will observe that he has good use of his leg and the result is almost perfect.

Discussion. Dr. G. B. Young: I desire to congratulate Dr. Marshall upon the result he has obtained in this case. There appears to be a little shortening of the injured leg, but by the use of an half-inch shoe sole I believe that in a month or six weeks there will be no evidence remaining of the injury. If the shoe sole be not thickened the pelvis may correct the shortening, but as he is growing in height I think it

* Stenographically reported for this journal by C. C. Mapes, Louisville, Ky.

would be better to correct this at the start by thickening the sole, otherwise as he grows his pelvis may be tilted and the final result may not be so good.

Dr. J. R. Wathen: I had the pleasure of seeing this patient with Dr. Marshall at the infirmary soon after the injury, and it certainly appeared a very ugly case to deal with, and presented many obstacles to be overcome in treatment. As has been demonstrated to-night, the cure has been so complete that the doctor certainly deserves to be congratulated for his excellent work.

Dr. Irvin Abell: I desire to particularly congratulate Dr. Marshall upon the result in this case, as he had a fracture of both bones of the lower leg to deal with in addition to fracture of the femur. In treating fractures of the thigh with plaster-of-Paris my experience has been unfortunate, so that Buck's extension apparatus is practically the only method that offers to me satisfactory results. There must have been some difficulty in the use of Buck's extension in this case on account of fracture of both bones of the lower leg, and Dr. Marshall deserves great credit for his successful management of the case.

Dr. Ewing Marshall: I neglected to state that at first in practicing extension I used a gutter double-inclined splint hinged at the knee, so incline could be changed with extension from the knee, the gutter splint being so arranged that the wounds could be dressed when needed.

Circumcision with Unusual Complications. Dr. G. B. Young: A large, robust-looking negro man recently came into the United States Marine Hospital for the purpose of being circumcised, which I proceeded to do. I do this operation with curved scissors, making my incision in such a way as to leave the frenum almost intact, on account of the fact that I have several times seen trouble with hemorrhage from the artery of the frenum. I always follow the method of Valentine, putting an iodoform gauze strip in between the sutures and tying the sutures over it. On this occasion, to my great surprise, although I had not divided the artery of the frenum, there was free hemorrhage. To make a long story short, it developed that I had gotten hold of an hemophilia. It was found that we had divided five small arteries, any one of which was as large as the dorsalis pedis of a child six years of age. These vessels may have simply been a circulatory anomaly. The artery of the frenum was not in its normal position; the man did not bleed to any extent until I had put on the dressing. I did not put an elastic

bandage around the penis, as I usually do. As soon as bleeding commenced I placed an elastic bandage around the penis, but hemorrhage continued. The dressings were then removed and we began to pick up the bleeding points, and not only did we tie the five small arteries already mentioned, but oozing continued from the mucous membrane and under the skin. At one or two points I put a ligature from the outside of the skin through en masse and constricted the vessel in that way. No sooner was oozing controlled in one place than it would break out in another. It took fully two hours to completely check the hemorrhage.

I inquired of the patient if he had ever bled seriously before, and he said that he had not, that he had never been cut before. I then asked if he had never cut himself on the hands or elsewhere, and if so, had bleeding been unusual? He said that he had frequently cut himself and bleeding was always excessive; that he was full-blooded; that he "had lots of blood in him"; that his father was the same way.

The interesting points in the case are that the man was an hemophilia, and second, the anomaly in location of the blood-vessels around the glans penis. When the dressing was taken off and an effort made to check the hemorrhage we found several veins as large as the radial vein of a child under the fascia, almost like a nevus.

Once before after a circumcision I had alarming hemorrhage from the artery of the frenum; a ligature was applied which did not hold, and there occurred secondary hemorrhage. On another occasion, six or seven years ago, I had some difficulty in controlling hemorrhage after circumcision.

In the present case it was not thought the patient was a bleeder, and no questions were asked. After this experience, at least until the lesson is forgotten, I shall not operate upon anybody until I inquire about the history of hemophilia. Ether was used in this case for general anesthesia.

In most cases of this kind I have been able to control oozing by means of an astringent composed of an alcoholic solution, equal parts of tannin and antipyrine, but it had no effect in this instance.

Dr. Krim just suggested that adrenalin solution might be useful in these cases. I have never tried it.

Discussion. Dr. S. G. Dabney: There is some little difference of opinion about the propriety of using adrenalin solution under these

circumstances, because of the danger of secondary hemorrhage. Of course adrenalin is used more extensively about the nose and throat than elsewhere. A good many men are of the opinion that it is unwise to use it and have the patient go out without taking some especial precautions to prevent after-hemorrhage. It has not been my experience, however, to have seen secondary hemorrhage following the use of this agent. I use it frequently in nose work, and so far I have never seen secondary hemorrhage; that is, secondary hemorrhage has been no more frequent than before I used adrenalin solution. The styptic mentioned by Dr. Young, tanno-pyrin, is an exceedingly useful one, as is also ferro-pyrin.

Foreign Bodies in the Throat and Eye. Dr. William Cheatham:

CASE 1. A man recently came to my office in quite a hurry, very much excited; could not wait for me to finish with a patient who was already in the consulting-room, as he was suffering very much with dyspnea, and gave this history: That he had been in a bar-room to get a drink and had stepped over to the lunch-counter and took a piece of meat with something on it, the nature of which he did not know, and had gotten something lodged in his throat.

I cocainized his throat, which was very sensitive, and could see a foreign body in the larynx. After getting the throat thoroughly anesthetized, by careful manipulation I removed from the larynx an olive leaf fully as broad as the end of my thumb. I suppose in making some hash or dressing they had chopped up some olives and this leaf happened to get in with the mixture. The man had suffered intensely from its presence in the larynx. It was very sharp and looked like metal; in fact, when I first saw it I thought it was a piece of metal that had by some means gotten into his throat.

CASE 2. A gentleman went out to trim away some briar bushes; a briar struck him in the left eye. The briar when I saw him was pushed through the cornea, with its point in the anterior chamber, but the anterior chamber was full. I sent him home and advised a compress, the use of atropia, cold cloths, etc. He returned the next day with the anterior chamber entirely empty, the briar having passed backward into the lens. He now has a small crescent-shaped spot on the lens, represented by the foreign body, and there is a slight injury to the cornea, but I hardly think there will be developed cataract, although my experience has been that cataract follows wounds of the capsule.

Of course the briar may work its way through the lens and give him some trouble in the future. There is no question, however, that the lens is the best part of the eye for the foreign body to remain in if it is to be left there, and as long as the foreign body remains where it is I do not believe it will cause him any trouble unless cataract follows.

Discussion. Dr. S. G. Dabney: If I understood Dr. Cheatham correctly, when he first saw this patient the foreign body was in the anterior chamber. Of course I know this is a delicate question, but I would suppose it would have been indicated to have gone into the anterior chamber and removed the foreign body. A foreign body in the eye is always such a dangerous object that if its removal is possible it should be accomplished. It is also interesting to note that in this case the foreign body of itself penetrated further and entered the lens. The man will be exceedingly fortunate if it does not produce traumatic cataract. A foreign body may be retained in the lens without the whole lens becoming opaque, but such instances are certainly of the greatest rarity. I think in this case the lens, including the foreign body, will have to be removed at some future time.

Peculiar Injury to the Knee. Dr. Ewing Marshall: I would like to report a case that has been giving me some trouble lately and get the judgment of the members as to treatment. A young man, who is a stenographer and typewriter, in sitting at his machine places his knee under the table to steady it while he is working at his machine. He takes the work mostly by dictation directly on the machine instead of writing it in shorthand and then transcribing, consequently his work is extremely rapid and he holds the table steady with his knee.

Six weeks ago he did not know there was anything the matter with his knee, but in buttoning or tying his shoe he placed his foot on the edge of the bed and thinks he twisted his knee-joint, and said he thought he heard something crack in his knee. The next morning the knee was painful and before night it became swollen, and he sent for me. It was Wednesday night when he put his foot up on the edge of the bed; Thursday the knee was painful, and he sent for me Friday morning, but being out of town I did not see him until Saturday, when the knee around the patella was over two inches larger than the knee of the opposite side at a corresponding point, and there was an inch and a half difference in favor of the injured side above and below the

knee; the swelling extended above and below the knee, and seemed to be fluid.

I kept the patient quiet for ten days or two weeks, thinking probably an operation would have to be done to liberate the fluid, but before doing that I suggested to the family that a consultation would be desirable, and they asked to have Dr. Vance see the case with me. Dr. Vance was called and said he did not think it would amount to anything, and advised putting the leg in plaster, to be kept on for three weeks. I put it in plaster and kept it there for three weeks, and when the plaster was removed the knee was in practically the same condition as before. I would be glad for any suggestions that the members can offer as to the further treatment of this case.

Discussion. Dr. H. N. Leavell: The case reported by Dr. Marshall is one of considerable interest. I would suggest that possibly a joint-mouse is keeping up the irritation.

Dr. G. B. Young: If there is any one thing harder than another, it is to tell what is the matter with a knee-joint. Personally, as the result of a football injury received a number of years ago, I have a pet knee, which gives me more or less trouble periodically. There is possibly a loose cartilage, and occasionally in tying my shoe I can feel something crack, and I will limp around for a hour or two with pain. Every now and then suffering is so intense that I will be compelled to go about on crutches for a month or six weeks. I have a cousin who is afflicted the same way. Nobody has ever been able to tell me what happened in this knee-joint, and I do not believe Dr. Marshall will ever know what happened in his case.

Dr. Ewing Marshall: After having this case under my care I read a very able article from the pen of an English writer, Herbert W. Allingham, on disturbances of the knee-joint, and he reports over fifty cases that have come under his observation in the last twelve years. He advises in these cases to open the knee-joint and drain thoroughly, even washing it out and feeling around in the joint with the fingers to see if there is a piece of loose cartilage or anything else present, and then closing the wound tightly. He says he has gotten perfect results in such cases by this method of procedure. In the case I have reported the only abnormality I have been able to discover is the presence of fluid.

P. F. BARBOUR, M. D., *Secretary.*

THE AMERICAN PRACTITIONER AND NEWS

"*NEC TENUI PENNÂ.*"

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H. A. COTTELL, M. D., M. F. COOMES, A. M., M. D., Editors.

A Journal of Medicine and Surgery, published on the first and fifteenth of each month. Price, \$2 per year, postage paid.

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DO NOT IRRIGATE THE PERITONEAL CAVITY WHEN IT CONTAINS PUS.

This is a question of vital importance and one that every practitioner and surgeon should thoroughly understand. It has been a live topic in many of the medical societies during the past few months, and the reason for irrigating an infected peritoneal cavity was certainly not understood by many even after what appeared to be satisfactory explanations had been made. First of all, it should be remembered that the whole peritoneal sac is one vast absorbing membrane; that it abounds in lymphatics and blood-vessels, and that in many cases the patients have consumed but little water for hours and possibly days before the abdomen is opened; the general thirst existing in disease or from the use of some drug, such as opium in any form, which might prevent the patient craving water or calling for it even if the system needed it badly, because of the obtunded sensation due to the action of the opium or to exhaustion from the disease; and even without any of these extreme conditions existing, the peritoneum is at all times an active, absorbing membrane, and the diffusion of a large or small quantity over its surface laden with poisonous germs can only hasten general infection of the entire economy by rapidly disseminating them over the whole system. In short, by vitiating the blood-stream, which after all is the great avenue through which the system is contaminated,

and it is the all-important thing to be considered in the treatment of any and all diseases.

It is easy to comprehend how a patient may withstand a large amount of virulent infective pus if it is isolated and the poison doled out in small quantities, but the minute you dilute such pus with water, or what is worse with normal saline solution, which is more readily handled by the absorbents, you overwhelm the powers of the patient with septic water, and it is only a short time until he will succumb unless he has wonderful resisting power. By wiping out the cavity with sterile gauze the risk is far less than when irrigation is practiced, because the absence of liquid limits the absorbing power of the peritoneum. Further, it should not be forgotten that there is a certain amount of resisting power existing in every patient, and that the activity of every poison found in these cases is limited and short lived. The chances for recovery will certainly be much improved, and in most cases recovery may be expected if the peritoneal cavity be not irrigated. Care should be taken in wiping out the peritoneal cavity to use as little friction as possible; press gently, and do not be stingy with the gauze. In this way enormous quantities of fluid may be removed in a short time and the cavity be made remarkably clean.

WE call the attention of our readers to the letter from the awarding Board of Surgeons to Dr. T. P. Grant, of this city, who was a competitor for the Enno Sander Prize Medal, which was offered for the best essay on "The Most Practicable Organization for the Medical Department of the United States Army in Active Service." While Dr. Grant did not get the first prize his paper was one of very high order, and we congratulate him on his good fortune in being so highly complimented by the board, which is one of the most rigid in the country.

Current Surgical and Medical Selections.

ENNO SANDER PRIZE, 1901-1902.—The Enno Sander Prize has for 1901-1902 been generously increased by its founder to consist of a gold medal valued at one hundred dollars, and one hundred dollars in cash. The subject for this year is "The Most Practicable Organization for the Medical Department of the United States Army in Active Service."

Conditions of the competition: 1. Competition is open to all persons eligible to active or associate membership in the Association of Military Surgeons of the United States.

2. The prize will be awarded upon the recommendation of a Board of Award selected by the Executive Committee. The Board will determine upon the essay to which the prize shall be awarded, and will also recommend such of the other papers submitted as it may see fit for honorable mention.

3. In fixing the precedence of the essays submitted, the Board will take into consideration—primarily—originality, comprehensiveness, and the practicability and utility of the opinions advanced, and—secondarily—literary character.

4. Essays will consist of not less than ten thousand nor more than twenty thousand words, exclusive of tables.

5. Each competitor will send three typewritten copies of his essay in a sealed envelope to the Secretary of the Association so as to reach that officer on or before February 28, 1902.

6. The essay shall contain nothing to indicate the identity of the author. Each one, however, will be authenticated by a *nom de plume*, a copy of which shall, at the same time as the essay, be transmitted to the Secretary in a sealed envelope, together with the author's name, rank, and address.

7. The envelope containing the name of the successful competitor will be publicly opened at the next succeeding annual meeting of the Association and the prize thereupon awarded.

8. The successful essay becomes the property of the Association of Military Surgeons of the United States, and will appear in its publications.

Major-general Wesley Merritt, U. S. A., retired.

Brigadier-general George Miller Sternberg, Surg. Gen., U. S. A.,

Brigadier-general John Moore, U. S. A., retired, Surgeon General.

Board of Award, 1901-1902.

John Vank Hoff, *President.*

James Evelyn Pilcher, *Secretary.*

The Association of Military Surgeons of the United States: President, Brigadier-general Robert A. Blood, Surgeon-general Massachusetts

Volunteer Militia; First Vice-President, Medical Inspector J. C. Wise, United States Navy; Second Vice-President, Surgeon-general Walter Wyman, United States Marine Hospital Service; Treasurer, Lieutenant Herbert A. Arnold, Assistant Surgeon Pennsylvania National Guard; Secretary and Editor, Major James Evelyn Pilcher, Brigade Surgeon, U. S. V., captain, retired, U. S. A.

Office of the Secretary and Editor, }
Carlisle, Penn., June 24, 1902. }

Captain Thomas Page Grant, Louisville, Ky.

My Dear Dr. Grant: I beg to enclose herewith a copy of your valuable essay submitted in competition for the Enno Sander Prize Medal.

The Board of Award regarded it very highly, placing it next in order to that which obtained the prize, and had we had a third prize it certainly would have been conferred upon you. It may surprise you that there was a second prize, for it was not announced, nor did it exist previous to the meeting. The Association, however, voted the life membership the reward for the second-best paper, and it will therefore be in the future, as in the present instance, the permanent second prize.

Congratulating you, my dear doctor, on the high standard which your paper manifested, I remain, with kind regards,

Always cordially yours,

James Evelyn Pilcher.

THE PREVENTIVE AND CURATIVE TREATMENT OF HAY FEVER.—It is difficult to conceive of a more miserable creature in all the world than the hay-fever sufferer. The attack not only makes him exceedingly uncomfortable, but renders him unfit for business or the pleasures of society. Aside from the annoying and continual discharge from the nostrils the eyes are suffused, the secretion of tears is increased, the nasal passages are obstructed, and an intense burning sensation is experienced; the latter is not entirely limited to the mucous membranes, but not infrequently involves the cutaneous surfaces of the forehead, cheeks, and nose. Violent attacks of sneezing occur, which are so prolonged at times as to completely exhaust the sufferer and bring on severe headache. The condition is one of utter wretchedness, and there is extreme malaise, amounting occasionally to complete prostration. The lightest duties become irksome tasks, and many an active, industrious, and useful member of society is completely incapacitated while "the season" lasts.

For years some convenient means of relief has been sought. Change of scene does very well for those, unfettered by business, who can afford to travel. But to many very worthy people a change of scene is out of the question. Naturally the greater number of the afflicted are accustomed to look to the medical profession for the help they need. But what has the medical profession actually accomplished for the permanent relief of the sufferer or the cure of his ailment? There is scarcely a sedative,

astrigent, tonic, nervine, or alterative drug in the materia medica that has not enjoyed an evanescent reputation as a useful remedy in the treatment of hay fever. Until the discovery of adrenalin, each had been as much of a disappointment as its predecessor, and none had afforded more than the merest temporary relief.

There is increasing evidence that adrenalin fully meets the indications as a remedial agent in hay fever. It controls the nasal discharge, allays congestion of the mucous membranes, and in that manner reduces the swelling of the turbinal tissues. As the nasal obstruction disappears, natural breathing is materially aided and the ungovernable desire to sneeze is mitigated. In short, a season of comparative comfort takes the place of the former condition of distress and unrest. Adrenalin blanches the mucous membrane by vigorously contracting the capillaries, and thus reduces local turgescence. It strengthens the heart and overcomes the sense of malaise so frequently a prominent feature in cases of long standing.

In the treatment of hay fever the solution of adrenalin chloride should be used. This preparation is supplied in the strength of one part adrenalin chloride to one thousand parts normal saline solution, and is preserved by the addition of 0.5 per cent chloretone. The 1-1000 solution should be diluted by the addition of four parts normal salt solution, and sprayed into the nares with a "cocaine" atomizer. In the office the 1-1000 solution may be applied in full strength. A small pledget of cotton is wrapped about the end of an applicator and moistened with a few drops of the solution (1-1000). The speculum is then introduced, the patient's head is tilted backward in a position most favorable for thorough illumination by the head-mirror, and the visible portions of the lower and middle turbinate bodies and the septum are carefully and thoroughly brushed. The same application is made to the other nostril, when usually relief follows in a few moments. Should the benefit prove only partial, the 1-5000 solution may now be sprayed into both nares, and a few drops instilled into both eyes. The effect of this treatment may be expected to last for several hours. Indeed, some physicians report that it is necessary to make but one thorough application daily to afford complete relief.

It is also recommended that solution adrenalin chloride be administered internally in five to ten-drop doses, beginning ten days to two weeks prior to the expected attack. In explanation of the beneficial effect of the drug when used in this manner, the suggestion has been made that hay fever is essentially a neurosis, characterized by a local vaso-motor paralysis affecting the blood supply of the eyes, nose, face, and pharynx, and occasionally of the laryngeal and bronchial mucous membranes. Adrenalin overcomes this condition, restores the normal balance in the local blood-pressure, and thus aids in bringing about a cure. The profession is to be congratulated that it has at last an agent that, if not a specific, fulfills the therapeutic indications more completely and with greater satisfaction than any other remedial measure recorded in the history of medicine.

CURETTAGE OF THE PUERPERAL SEPTIC UTERUS.—W. R. Pryor (N. Y. Med. Jour.) differentiates between saprophytic and septic puerperal fevers. In the former there is retention of dead material which should be removed; in the latter the process is never superficial, the infection penetrating deeply into the tissues. While curettage may be justified in the saprophytic cases, he therefore contends that it is mischievous in the septic ones. In proof of this he submits the investigations made by a commissioner of the American Gynecological Society, appointed in 1898. An analysis of every case of puerperal fever reported in the five preceding years was made, covering the period during which the bacteriology of the puerperal state was studied. It was found that the two men whose observations are the most reliable and whose treatment of septic cases is identical, Whiteridge Williams and Kronig, applied no local treatment whatever to the inside of the uterus, doing nothing to it other than what was necessary to establish the diagnosis; and only having a mortality of five per cent. Here, then, we have a basis upon which to work, and we are warranted in saying that excepting epidemics of particular virulence, but five per cent of women with puerperal sepsis will die if the uterus is left alone. On the other hand, in the analysis made by the commission mentioned, it was found that curettage of the uterus when bacteriological examination had been made and the streptococcus found gave the frightful mortality of twenty-two per cent. No more startling indictment can be given of the custom of curetting the septic puerperal uterus.—*Courier-Record of Medicine*.

THE TREATMENT OF BURNS.—E. O. Plumbe (St. Paul Med. Jour.) says that he has lately employed picric acid with excellent results, using it in about one per cent alcoholic solution reduced with sterilized water—about twenty-five per cent alcohol. This is applied on sterilized gauze and covered with absorbent cotton loosely bandaged. He does not, as a rule, wash these injuries, especially where the blebs are unbroken. If required to be cleaned, any mild antiseptic may be used. For mild burns he has had good results from some mild antiseptic powder, as boric acid, or the acid triturated with a little spirits of camphor and carbolic acid. In one recent case he used a compound of chloretone and boric acid; it seemed to allay pain and act nicely. For severe burns, however, he prefers the hydro-alcoholic solution of picric acid. The old-fashioned carron oil, lime-water, and linseed oil will allay the pain of burns, but it does no more, and its use will invariably be followed by suppuration. He was never able, by any combination, to make it antiseptic. In his early practice, when it was impossible to see these cases oftener than from two to four or five days, a cosmoline ointment, containing about five per cent each of balsam fir and carbolic acid, with a little morphia, was found a good preparation to leave with patients. It acted much better if sterilized for an hour before cooling in a water bath. It was applied thickly on strips of cloth and covered with sheet cotton. If in any case pus is formed, no matter what may have been the treatment (for in many cases of severe burns it seems impossible, even with energetic antiseptics, to prevent it), hydrogen peroxide should be freely used.—*Ibid*.

GOITRE.—Dr. E. Hoenigschmied reports the case of a woman, forty-two years of age, suffering from a considerable enlargement and induration of the thyroid gland, which produced marked dyspnea, constant hoarseness, short dry cough, and difficulty in swallowing. The goitre was treated with iodothyrene in five-grain tablets, one being given at first at night and later twice daily. After the administration of twenty-five tablets the enlarged gland had diminished considerably in size and was softer, while the previously hard and resisting nodules were more elastic. The remedy was continued, and at the end of fourteen days only small remnants of the goitre remained. For the cough heroin was administered. Aside from the internal use of iodothyrene no local application was made, so that the satisfactory results are entirely attributable to the drug. A similar case of goitre is reported by the author in which the indurated portions of the gland were entirely removed, the existing cysts, however, remaining unaffected.—*International Journal of Surgery.*

Special Notices.

DR. L. A. ANTHONY, of Anthony's Mill, Mo., says: I prescribe Celerina quite frequently, and the results are always satisfactory. On May 6th I was called to see Mrs. K., aged twenty-four. Had been married about four years, had two children. Said she had been troubled for some time with painful and irregular menstruation, followed by leucorrhea. She also complained of being nervous at times. I prescribed

R Celerina, $\bar{3}$ viii,
 Aletris cordial, $\bar{3}$ viii.

M. Sig. Two teaspoonfuls three times daily before meals.

For injection prescribed S. H. Kennedy's extract of *Pinus Canadensis*, white, two teaspoonfuls to pint of water three times a day. Patient made a rapid recovery.

Mr. Mac. aged forty, married fifteen years, five children, health has always been good until about three years ago, when he had an attack of acute articular rheumatism; has been troubled since then with dyspepsia and impotency. Would also say that he has been a hard drinker all his life. I prescribed

Celerina, $\bar{3}$ iiiss,
 Tinct. capsici, $\bar{3}$ ii,
 Tinct. nux vomica, $\bar{3}$ ii.

M. Sig. Teaspoonful in water before meals.

By the time he had taken the first bottle said he had the feeling of youth with said results, and by the time he had taken the third bottle was completely cured.

In Papine advanced pharmacy has given us a perfect opium preparation. It possesses the anodyne virtues of opium and not the constipating and untoward actions. Papine may be briefly defined as the only opiate which is free from the evil effects which I have just named. It is very prompt, in this respect excelling any other opiate, and it never produces nausea, constipation, and the usual woes that go hand in hand with the old-time opiates. Papine is, therefore, the remedy which is indicated in all forms of inflammatory pain. It is given in doses of one teaspoonful every one, two, or three hours until its anodyne action is attained. In giving Papine, we can bear in mind that a teaspoonful represents the strength of one-eighth of a grain of morphine. Having this fact in mind, the dosage which is appropriate in any case will at once suggest itself.—Extract from "Remedial Measures Indicated in Affections Attended with Pain," by G. S. Trotter, M. D., in *New Albany Medical Herald*.

THE AMERICAN PRACTITIONER AND NEWS.

"NEC TENUI PENNĀ."

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No 3.

Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

THE PRESIDENT'S ADDRESS.*

BY T. B. GREENLEY, M. D.

Ladies and Gentlemen and Members of the State Medical Society:

You will please accept my reiterated thanks for the honor that you have conferred upon me in electing me president of our honorable and eminent State association. I regard it as great an honor, if not greater, than if elected governor of Kentucky.

Notwithstanding my being greatly elated with this honor conferred upon me, I at the same time can not but feel impressed with the weight of duties devolving upon me as your presiding officer.

I wish to impress my views in several particulars pertaining to the welfare and advancement of our profession, and in doing so I hope to coincide as nearly as possible with the views and opinions of my confrères.

In the first place, I would like to encourage and advise a more cordial and friendly fellowship among members of the profession.

If cordiality and friendship ought to exist among any set of men it should exist between members of the medical profession. It is not only to their own disadvantage to be unfriendly toward each other but it is unpleasant to their constituents or clientele. You frequently hear of doctors in little towns being so disagreeable to each other as not to be on speaking terms, and if one has a patient needing consultation some doctor at a distance would have to be sent for, thereby entailing more expense to the patient.

* Read before the Kentucky State Medical Society, May 7-9, 1902.

This is all wrong; we should live and act neighborly with each other, the same as brothers in a church. It is essential under certain circumstances that we should not only be friendly, but united as a body, to effect certain reforms or prevent our interests, as a profession, being injured or interfered with by designing and heartless quacks.

In defending our right as a profession we must present a solid front in order to obtain our just dues, or prevent the infliction of wrong. It is occasionally the case that it becomes essential that an act of the legislature should be passed to promote salutary influence or prevent the ingression and practice of quackery. In such cases it is necessary to act as a body, in concert. Therefore, brethren, recollect the old adage, "United we stand, divided we fall." In union there is strength. If a young doctor settles in your vicinity, treat him with kindness. This is not only humanity, but patriotism, as the young must sooner or later take the place of the old, and if we treat him kindly and assist him in his duties he will be better able to attend the sick. In the future we hope that never

" With tongue and pen we battle
With our brother ;
And madly strive
To stigmatize each other."

2. We, as a profession, have the reputation, which to a great extent is true, of being the most humane and philanthropic body of men extant, hardly excepting the clergy. We extend our services to the poor sick gratuitously. We cultivate means, in a sanitary point of view, by which disease may be prevented. In doing this we virtually work against our interests, financially speaking, that is, to prevent the occurrence of disease, which we make our living in endeavoring to relieve. This is something no other body or set of men ever do. "They do not work for money alone; the cry for universal cleanliness comes from the doctors. They are in favor of every idea, invention, thought, or act that will prevent disease and suffering and add to the physical comfort of the people. There isn't a practical move for the physical betterment of mankind that does not find them ready to coöperate and lead when able and strong leaders are needed."

" Honor and work can make a name,
To leave on some page of fame."

In this particular we count as humanitarians as well as in tendering medical attention to the poor gratuitously.

But as moral or religious men we can congratulate ourselves that we are to some extent following the example of the Great Physician, who went about doing good and healing the sick. The celebrated Boerhave was asked by a friend how he could afford to attend upon so many poor, and he replied that God was their paymaster, that he was better pay than the rich man. Remember the triplet—

“ But the warm heart that lights the poor man’s door
And puts a song where groans were heard before
Brings peace to us and gratitude to the poor.”

3. I would like to say a few words respecting the reorganization of the American Medical Association, as it embraces State and other medical societies. It virtually makes members of county societies, members of the State societies, and advises all applicants for membership in the State society to first join the county society or a kindred association. This may prove somewhat inconvenient to doctors living in counties where no organization exists; but there will be in the near future efforts made to organize societies in counties where none now exist. Our able secretary of the State board of health will soon undertake that pioneer job.

The main object of the reorganization of the American Medical Association is to exert a greater influence in promoting the welfare of the profession in the United States. It is now, perhaps, the largest medical body in the world, and gaining about two hundred members monthly. Its aggregate membership at present is in the neighborhood of twelve thousand members.

Under the present organization the association is to consist of what is termed a house of delegates, not to exceed more than one hundred and fifty, and each State association is entitled to send one representative as a delegate to every five hundred members, or less, and one for a fraction over that number. Each of the twelve sections is entitled to two members as delegates. Also, the war and navy departments and the marine hospital service are entitled to one delegate each. The object of this house of delegates is to attend to all legal matters pertaining to the welfare of the association, and to have referred to it any motions that may come up in the other house, the election of officers, and all other business.

The regular members are known as the scientific branch of the association. The Journal of the American Medical Association has about twenty-five thousand subscribers, all of whom should be members of that

body, as it requires no extra fee to be a member. It is presumed that this journal has the largest circulation of any medical weekly in the world. Considering its size and quantity of reading matter, it is a cheap journal. It brings to its members weekly the medical news of the world. Its editor gives several pages of scientific articles on different subjects. The journal contains from sixty to eighty pages of reading matter weekly.

4. Quackery in the medical profession. We thought a few years ago that we had laws in Kentucky sufficient to keep quackery and fakirism out of our profession, but it seems that we were mistaken as to their efficiency. Over a year ago one of our ablest circuit court judges decided that an osteopath, under our statutory laws, could not practice what he claims to be his plan of treating diseases in Kentucky, and was fined fifty dollars for violating the law. But on appeal this judgment was reversed by the Court of Appeals on the grounds that osteopaths did not practice medicine or treat diseases. In the estimation of medical men it was thought this conclusion of that eminent body of legal men took a very singular view of the character of osteopathic practice. If they do not treat diseases or afflictions, what is their object in endeavoring to get patients to practice on? Are they hunting for well people to whom to apply their art? This would be something new under the sun, and might be regarded by common-sense people as a small miracle.

But this is not, or should not be, more astonishing than what the so-called Christian Scientists teach, and find people suffering from disease foolish enough to believe, that no difference how much pain they may have it is all imagination; that there is no such thing as disease, and to think so is all imagination; that we are immortal, and consequently can not suffer pain or be diseased. In accordance with this doctrine our Court of Appeals would allow the followers of Mrs. Eddy to practice in Kentucky, as they claim not to treat diseases, with as much or even greater propriety than the osteopaths; but, of course, the object of both parties is to accumulate filthy lucre. Mrs. Eddy is now very wealthy. Our object should be as soon as possible to have a law passed by our legislature which would cover all these quackish objections. Our ability to succeed in this particular depends on our united action. This is one reason why I so strenuously urge the amity and unity of our profession throughout the State.

To accomplish such a desirable object for the welfare of the people it is essential that we move with united action and determined resolu-

tion. We know that our able secretary of the State board of health will do everything in his power to accomplish the object in view.

In order to illustrate different ideas of learned men on the subject of diseases and the practice of medicine I have concluded to copy the late statute of our legislature aiming to prevent quackery in Kentucky. It is as follows :

“ Any person living in this State, or any person coming into this State, who shall practice medicine, or attempt to practice medicine in any of its branches, or who shall treat, or attempt to treat, any sick or afflicted person by any system or method whatever for reward or compensation, without first complying with the provisions of this law shall, upon conviction thereof, be fined fifty dollars, and upon each subsequent conviction fined one hundred dollars and be imprisoned thirty days, or either or both in the discretion of the court or jury trying the case ; and in no case where any provision of this law has been violated shall the person so violating be entitled to receive any compensation for the services so rendered.

“ To open an office for the purpose, or to announce to the public in any way a readiness to treat the sick or afflicted, shall be deemed to engage in the practice of medicine within the meaning of this act.” Acts 1898, Chapter 49. Approved March 18, 1898.

It will thus be seen that the law is very plain and positive as it respects the treatment of diseases and affliction of any kind, and one would suppose that if the osteopaths or any other character of quacks do any practice in a legal way it must be on those who are not sick or afflicted ; or, in other words, on well people. But the Court of Appeals say they do not practice medicine. The statute just quoted says they must not treat any diseased or afflicted by any of the branches of medicine. It is said that they use what is termed in medical parlance massage, but I understand they call it “ bone rubbing.” Massage is one means of treating disease practiced by most physicians under certain conditions, and is very useful. But would the osteopaths rub without pay ? The law says they must not charge. Of course, we must to some extent excuse the decision of the Court of Appeals, as it is presumed that they are not well posted in medical matters. It might be a little plainer to our legal brethren if we were to substitute a statute lately drawn by our great legal friend, Attorney Bell, of New York, to be enacted by the legislature of that State. It is a little more definite than ours, and is as follows :

“ Any person shall be regarded as practicing medicine within the meaning of this act who shall for remuneration, charge, fee, gift, bonus, or reward,

directly or indirectly, profess to heal, or who shall give treatment to any person by the use of any means or method whatsoever, whether with or without the use of any medicine, drug, instrument, or other appliance for the relief or cure of any wound, fracture, or bodily injury, infirmity, physical or mental, or other defects or diseases."

This would seem to embrace anything that a doctor would be called upon to treat; therefore it would seem, as before remarked, that the osteopath would have to treat well persons if he got any practice. The osteopath law proposed to be passed in the New York Legislature only received two votes in its favor.

"Thus, by these subtle trains
Do small passions invade the mind,
And strike our reason blind."

5. I wish to say a few words respecting the presence of smallpox in our State during a year or so past. It would seem that it has been more prevalent during the last twelve or eighteen months than for the decade previously. The cause for this greatly increased number of cases, scattered nearly all over the State, is very obvious to the mind of the medical man. It is doubtless due to the neglect of vaccination. I think it is the duty of the profession to endeavor to instill into the minds of every community the great utility of this practice in preventing smallpox and in the saving of life. We have at our command sufficient evidence to convince every reasonable mind that it is virtually a certain prophylactic against that terrible disease. I noticed not long since a report of two hundred cases of smallpox received at a hospital, and on examination it was learned that not one of these had been vaccinated; and in that institution, where there were many attendants, not one took the disease. Of course they had all been vaccinated.

The prevalence of this terrible disease in a neighborhood not only produces great excitement among the people but interferes very greatly with business matters. This results from having the patient quarantined, which is done at the expense of the people of the county where it prevails. Since the disease became prevalent in this State it has cost over a hundred thousand dollars directly to pay quarantine expenses, and indirectly, on account of its interfering with the progress of business, perhaps over a million dollars. This is not all; the worst, perhaps, is the suffering of the patients and the loss of life, to say nothing of the cost of medical attention. Life and health should always be regarded as far above money considerations, therefore we

hope that every doctor in Kentucky will urge the people to be vaccinated, as I doubt there being in our good Commonwealth a medical man who does not believe it is a prophylactic against smallpox.

I recently noticed an account of a medical man, I think in the city of Boston, who was opposed to vaccination and had never been vaccinated. During the prevalence of smallpox in that city he took the disease and died. I sympathize nearly as much on account of his want of mental discretion as I do on account of his death.

6. There is another subject on which I have spent some thought, in which the profession of the State should feel much interest. I allude to the want of vital and mortuary statistics. We really know nothing of the extent of disease and mortality of the State except every ten years, when the government takes the decennial census of the country. In this particular we are far behind many of our sister States. I believe the city of Louisville publishes the only reports of births and deaths in the State. For our own pride, as well as satisfaction in the way of knowledge, we should at least have an annual report published, so that we might stand on level ground with our neighbors. Some States gather and publish monthly reports. Indiana has a very good law respecting this matter, and several years ago, having a nephew a member of the legislature, I examined the Indiana law and wrote out in statutory form what I thought would be a good law for Kentucky and sent it to him to bring before the legislature; but as there was a doctor representing the Maysville district my nephew thought, of course, he would take more interest in the matter and have more influence in getting it enacted into a law; he turned the paper over to him, and that was the last of it.

We have had a law or two passed upon this subject, but so inefficient that they have not been observed, and have consequently done no good. Not only every doctor, but all intelligent people, would like to know the birth and death rate, as well as the character of the disease which causes death.

I hope our profession will take some interest in this matter and get a proper and effective law enacted, so that we will not have to wait ten years for the Federal government to tell us how we stand as respects the disease, birth, and death rate.

7. A few remarks respecting a matter that not only doctors but all people are greatly interested in. I allude to the nostrums and so-called remedies so widely scattered over the State, and greatly to the

detriment of the people. I have thought for a long time, and have written on the subject, that if we had a law compelling the proprietors and vendors of these secret nostrums to place upon each bottle or package a formula of its contents it would be much better for the people, and no disadvantage to the proprietors if they contained ingredients of value in the treatment of disease. The profession would not mind using any of them if they were of value, as we always want to know what to use in the treatment of disease.

Several States have laws to this effect enacted. A law of this kind would curtail to a great extent the credulity of the people, as they would know what they were taking. As it is, a great many of them will gobble up anything that they see advertised to cure disease, and sometimes when they read an advertisement many think they are affected with the trouble that the nostrum is advertised to cure, and take it. You frequently see advertisements that tell you that you may be diseased with certain complaints and don't know it, and for fear that it will fully develop take some of the remedy. No doubt a good many in fair health who happen to see the picture representing fine health and beauty being the effect of certain medicines will take some of the compound in order to look like them.

In speaking of so-called patent medicines I would like to say a few words respecting advertisements of a certain character that we notice every day in our secular papers. I allude to pennyroyal pills and tansy pills. They are strongly recommended and warranted to have the desired effect, and are sent by mail in sealed packages. These are, of course, for women, and we can read between the lines very plainly what is meant. Such advertisements sent through the mails are against the laws of the United States, and are an outrage against morality and humanity. There are others of an immoral character, such as those pertaining to what they call "Weak Men." All such stuff should be eliminated from the newspapers.

I am glad to say that some of the best papers in the country refuse to publish any patent medicines or immoral advertisements. This should be highly recommended by all lovers of decency and right doing, and it is to be hoped that their good example will be followed by others.

We hope an effort will be made to get a law passed as above alluded to, both for the benefit of the people as well as ourselves.

Now, gentlemen, in closing I would like to remark that when I take a retrospective view of the long list of the eminent, scientific,

moral, and upright men who have preceded me as presiding officer of this association, it not only makes me feel proud to be their successor, but has stimulated me to endeavor to emulate them in their various attainments in their profession, and their characteristics as virtuous, honorable men.

Every member of the medical profession of Kentucky should feel proud of the high standing of his predecessors in medicine in the State, and endeavor to imitate them as far as possible.

Now, fellow members of the State Society, I would again thank you for the great honor that you have conferred upon me in electing me to the presidency of this noble body of men. Your kindness will never be forgotten.

"I thank the Heaven, our lengthened life
Has passed in love unmarred by strife."

MEADOW LAWN, KY.

CHANCRE OF THE TONSILS.*

BY WILLIAM CHEATHAM, M. D.

Having seen in eighteen months seven cases of chancre of the tonsil, and on speaking to some of my medical brethren about the matter, most of them remarking that they thought the location of the lesion rare, I thought it well to call the attention of the profession to the fact that it is not rare, but rather common.

Bulkley, in his "Syphilis of the Innocent," page 30, table of localization of extra-genital chancres, gives a total of nine thousand and fifty-eight cases. The tonsil comes sixth in frequency, with three hundred and seven cases, or $.3\frac{1}{2}$ per cent of the nine thousand and fifty-eight cases reported. I was surprised to see in this table that the lids and conjunctiva claimed 4 per cent, or one half of 1 per cent more cases than the tonsils.

Kyle, in his most excellent work on "Diseases of the Throat," page 464, says: "Next to the genitalia the tonsillar and pharyngeal sites are perhaps the most frequent seats of the primary lesion."

Again returning to Bulkley's table, we find the tonsils and throat together give five hundred and seventy-one cases, which will still place this location as fourth in frequency, being exceeded by the lips, which

*Read before the Kentucky State Medical Society, May 7-9, 1902.

come first as a point of invasion, breast and nipple, and the fingers and hands.

We are told that the tonsil is a "physiological wound." This refers, I think, to the tonsillar crypts; they are always open, and the different forms of virus find here an excellent field for invasion, concealment, protection, and procreation. Again, the tonsil is well located for the reception of all the different forms of virus.

I think many cases of chancre of the tonsil are overlooked. If one expects to see a chancre of the tonsil resembling chancre of the male genitals he will often be deceived. Usually the size of the tonsil alone decides the size of the chancre, as a majority of the cases I have seen involved in the end most or all of the tonsil surface.

In my experience, the indurated base is not so well marked or so easily made out, on account of the soft tonsil tissue beneath. Again, in chancre of the tonsil there has been in the majority of the cases I have seen little or no loss of tissue. The surface is sometimes covered with mucus, which is easily wiped off, but more often with a pseudo membrane somewhat elevated above the tonsil surface, so the local appearances are not quite the same. I have never seen a case of chancre of the tonsil that had not existed for several weeks. All the recent cases but one had the secondary symptoms.

The seven cases referred to in this paper all had marked cervical and submaxillary buboes developed except one. Chancres of other localities were absolutely excluded. These cases were not cases referred to me in consultation, or such as a matter of interest to see. Of the latter class of cases I have seen five in the eighteen months; these included would give me twelve cases of chancre of the tonsil seen in eighteen months.

The books say the primary sore is not of long duration. One of my cases I saw February 17th. He had had a sore throat, with cervical and submaxillary bubo, very large, since before Christmas.

Kyle, page 465, says: "The skin overlying these enlarged glands is not discolored; the glands themselves are felt as firm and freely movable bodies, well outlined, and there is no tendency to suppuration, though the swellings may become quite noticeable." He says: "The swelling is slow and indolent, involving the glands at the angle of the jaw and sterno-cleido-mastoid muscle, unilateral if one tonsil alone is affected, bilateral if the chancre is double or one on each tonsil."

One of my cases was of this character. The patient was a handsome, finely-developed woman, an actress; she had had sore throat for

some weeks, and had been treated by her New York doctor for some time. She came here direct from New York to take the place of another actress who was to retire from the cast. She had a chancre of each tonsil, with bubo on each side of the neck, and typical skin eruption. Dr. Windell saw this case and confirmed the diagnosis.

One of my cases referred to a moment ago as having no secondary symptoms and but little glandular enlargement had the chancre located on the posterior surface of the tonsil, which I did not recognize for some time. The skin symptoms came late in this case. One must remember that the secondary eruption may be delayed three or four months if the eruption is papular in character, more especially so in my experience, and Bosworth refers to it on page 498 in his work on "Diseases of the Throat and Nose."

Dr. Evans, of our city, says he had one case, in an old woman, in whom the secondary skin eruption did not appear for twelve weeks.

On inquiry of some of the Louisville profession as to the frequency of chancre of the tonsil as seen by them, Dr. I. N. Bloom says he has seen seven cases; Dr. Evans, four cases, three of these in twelve months; Dr. Dabney, four cases; Dr. Taylor, none; Dr. Windell, fifteen cases; Dr. Coomes, two cases.

There are, of course, many ways in which the tonsils may become inoculated by syphilis. The most common is through kissing, the drinking cup, the pipe, the acts of degenerates, and surgical and dental instruments. One of my cases said there were several others with similar sore throats in the factory in which he worked. These, of course, may have been secondary, yet he said they had glandular enlargements similar to his.

Of my seven cases only one was a woman, and that was the case mentioned as having a chancre on each tonsil. All were adults.

The diagnosis of secondary and tertiary syphilis of the throat is usually easy, that of primary not so easy. Of course the history of exposure in such cases is much more difficult to obtain; degenerates will, of course, deny all possibility of an exposure, but when the history of exposure can be gotten it is of much help in the diagnosis of tonsillar chancre.

A persistent sore throat with enlarged glands at the angle of the jaw and along the sterno-cleido-mastoid muscle, these enlarged glands indolent, movable, with no periadenitis, with no tendency to suppurate, with or without a history of the possibility of infection, with a

tonsillar lesion such as described, with or without the secondary skin eruption, must be looked upon with great suspicion, for in a great majority of cases we have a chancre of the tonsil. Even with a persistently inflamed tonsil, with the character of bubo as mentioned, with or without the skin eruption, one must be cautious as to diagnosis and prognosis.

As to local treatment, nothing can be done to change the severity of the invasion. Local applications of silver nitrate or cleansing and antiseptic sprays will reduce the swelling, probably reduce the pain or shorten its duration, and possibly prevent the invasion of other forms of virus.

Constitutional treatment should or should not be given, as the physician may believe as to its effect upon secondary symptoms. My own practice is to wait for secondary symptoms, or to refer such cases to the syphilographer. Should I treat the case myself, however, I would wait for secondary symptoms.

In the case of double tonsil chancre, in six days, under inunction twice per day and the daily application of silver nitrate and a bichloride of mercury and hydrogen dioxide gargle, the throat was absolutely normal except a small cicatrix on each tonsil, which was difficult to make out, and the glandular enlargement was so small as to be scarcely discoverable by palpation.

One other of my cases was in the person of an actor, who had seen several doctors on the road and who had been treated by them all with no benefit. Dr. Windell saw this case also, and treated him.

A case of extra-genital chancre, not of the tonsil, however, which I wish to mention before closing on account of the rarity of its location, was in the person of a young man. The chancre was in the exact center of the hard palate, about the size of a nickel and as perfectly outlined. This is the only chancre I ever saw in this location.

Bulkley, page 154, mentions a case of chancre of the hard palate reported by Morgannier.

LOUISVILLE.

THE HAND IN FACTORY SURGERY.*

BY C. C. GODSHAW, A. B., M. D.

When we consider the power of wealth and the natural desire of corporations and manufacturers to increase their worldly gains and economize time by using the most improved machinery, oftentimes of the most hazardous character, we can readily see how the mechanic, artisan, machinist, and the laboring classes in general, of both sexes, in their efforts to earn a living run the risks of injuries to the hand by virtue of its exposure. The hand is one of the most important members of the human body, and in proportion to its natural integrity is the power and capability of man to fight the battle of life. We admire its beauty and symmetry, yet it can not be denied that man, whatever his vocation in life might be, is considerably handicapped if any portion of his hand be crippled. Therefore it is highly important in all injuries and wounds of the hand, whether caused by factory mishaps or otherwise, to always bear in mind two important factors—conservatism and utility. The hand is the organ of prehension and touch, and it should be the aim of the doctor, in all injuries involving the hand, to maintain its efficiency in both these respects, and especially where the fingers are injured to preserve as far as possible their flexion and extension.

Erichsen says: "The hand, from a surgical point of view, is composed of two constituents—the hand proper and the thumb. The thumb may be called the accessory hand, an opponent to the rest of the member, through the medium of which the movements of ab and adduction are chiefly performed, and without which the member is susceptible of comparatively little utility, being capable of little beyond flexion and extension. Hence the thumb is of equal importance to the rest of the hand, and the preservation of its three bones is as much to be considered as that of the remaining sixteen that enter into the conformation of the metacarpus and fingers. In all cases of injury or disease implicating the thumb every effort ought to be made for its preservation. Even if it be left stiffened or incapable of flexion it will be a most useful opponent to the rest of the hand. Should it be found necessary to shorten it, care should be taken that as little curtailment as possible be practiced; a portion of the phalanx of its metacarpal bone even is of essential utility in giving strength and breadth of grasp to the hand."

* Read before the Kentucky State Medical Society, May 7-9, 1902.

So you can easily perceive the importance of endeavoring always to get the most useful and practical results when any portion of the hand of a factory employe has been injured, even at the expense of symmetry and beauty. This is a progressive age, and we can proudly say that the science and art of surgery have kept pace with the progress of the times, and by faithfully following strict aseptic methods most excellent results can be accomplished.

This paper was prepared particularly for the general practitioner, because most usually whenever a surgical emergency occurs the nearest doctor is hastily summoned, and it is advisable to be always ready with an emergency satchel containing a minor operating case, aseptic bandages, gauzes, absorbent cotton, needles, sutures, anesthetics, antiseptic tablets, and last, but not least in importance, Esmarch bandages, clean, soft brush, and some liquid soap. Always remember that the first attention is the best, and the first surgical dressing, if properly applied, is the most important, and should not be disturbed for at least eight days unless there be undue throbbing, unbearable pain, or indications of septic infection.

In all injuries of the hand, whether trivial or severe, as in any surgical operation, it is a safe rule to watch the pulse carefully and let the thermometer be your guide for subsequent treatment. We all know that it is by strictly following the lesson of asepticism that the brilliant results of the abdominal surgeon have been accomplished. Antisepsis, asepsis, and surgical aseptic technique are clinical facts, and the conscientious doctor of to-day is alive to these truths and carries them into practice.

When a student in the office of that distinguished surgeon, the late Professor Richard O. Cowling, Professor of Surgery in the Medical Department of the University of Louisville, the invaluable lesson of absolute cleanliness in surgery was indelibly impressed upon my mind. With him cleanliness was a religious conviction, and was rigidly enforced, as was attested by his successful work.

The day is passed for carelessness, ignorance, and indifference in the treatment of wounds. Why draw the line of demarcation as to hand injuries of factory employes in machine shops, or railway employes, and the aseptic methods so carefully used in abdominal surgery and capital operations?

About twenty-five years past, when Dr. Cowling was surgeon of the Short-line Railroad, I had the honor to be his chief assistant, and

treated and dressed many injured hands of the employes. He preached and practiced conservatism, and would say: "Godshaw, save everything you can; do patchwork and sacrifice beauty and form for usefulness." Since then I have been located in a factory district, and while I regret I have kept no accurate data, I am satisfied the bulk of the surgical emergencies I have seen was of the hand, involving the metacarpal portions and the fingers, and mostly the latter. The surgical treatment of all injuries involving the hand must of necessity depend upon the nature, extent, and severity of the injury sustained.

It would not be fair to take up the time of this Society to enter into a minute detail of the anatomy of the hand, so richly endowed with blood vessels and nerves, the functions of the many muscles, ligaments, and tendons, their origin and insertion as well as their relation to the phalanges, metacarpal and carpal bones. Suffice it to say, in addition to the practice of the strictest asepsis to get the best results obtainable, whether it be a slight injury of the ungual extremity or a complete laceration and contusion of the whole hand, the doctor must know the anatomy of the hand and be ready for every emergency.

I would not insult the intelligence of the members of this Society by telling them how to treat shock and burns, to reduce dislocations and set fractures involving the hand, neither to describe the various methods and rules for amputations, nor tell you when and where such steps are necessary. It is rather my object to make a strong plea for asepsis and conservatism. "Amputate as a dernier resort," is a good rule to follow, and give nature a chance to show what she can do by saving all you can at the first dressing. Of course, good judgment and experience are very valuable, because every injury of the hand must, so to speak, be individualized, as we invariably find these injuries to differ in nature, extent, and severity.

When a surgeon intends to do a major operation the patient usually undergoes preparatory treatment, and the operator, surrounded by the most aseptic conditions and aided by able trained assistants, naturally expects a speedy and good recovery. But in surgical emergencies of factory hands, or more especially injuries involving the hands of employes about railways, machine shops, woolen, planing, and saw mills, tobacco factories—in short, where frequently dirt, cinders, filth, and grease become part and parcel of the injury received, it is indeed a marvel what brilliant results can nevertheless be obtained if we make these wounds as aseptic as we can and practice a thorough aseptic surgical technique.

As humanitarians ought we not to protest against child labor employed about dangerous machinery? Be it said to the honor and dignity of this grand old Commonwealth, the legislature at its last session put its foot down on the employment of child labor in factories.

It may seem that I am digressing somewhat, in one sense of the word, from my subject, yet I am justified in speaking of the hand as an individual, as he sometimes is known as the factory hand. Therefore, the relation of the factory hand or employe to his employer or surgeon in attendance is frequently worthy of attention and consideration. I further maintain that while we are expected to be true to "both the employer and the injured employe," yet is it not but fair and just that the latter shall practice the golden rule toward us? In this way not alone harmony and peace will prevail, but love and good will reign supreme. And right here, from a medico-legal aspect, whether you dress the injured hand of a factory employe at the place of injury, your office, or it matters not where, have living witnesses for self-protection, that you will not be held responsible for the results of the injury. Sometimes amputation is absolutely required, or a badly crippled hand unavoidable. Though I have had no such experience; yet there are cases on record of deaths from septic infection and tetanus; therefore it is always safest to explain matters clearly to the injured party and interested parties. Most usually the city doctor has an assistant with him, and has this advantage over his country brother. Then again, when the injury to the hand is of a severe character, as a bad laceration and contusion of the soft parts entering the metacarpal and phalangeal articulations, complicated with fractures, then the movements of flexion and extension are frequently destroyed or very much impaired, because if the sheath of the tendon be in any way opened or injured the tendon generally sloughs or becomes consolidated or matted to the sheath in such a manner as to become fixedly rigid, or there is very little movement.

Before concluding this paper, wherein I have tried to say *multum in parvo*, let me remind you of my article on "Surgical Emergencies from a Medico-Legal Standpoint," which is published in full in the transactions of the Kentucky State Medical Society held at Louisville, May 22-24, 1901. You will remember that I quoted in full the decision of the Court of Appeals against me for trying to collect my just dues from a certain factory for services rendered an injured employe at the request of the foreman. I desire to call the attention of the

general practitioner and surgeon to the fact and precedent established by the wise Solons of the law, who have ruled in this case that a foreman of a corporation or factory is only recognized as a special agent employed for a specific purpose, and is not authorized by law to employ a surgeon in emergency cases and obligate his employer or the corporation for the services so rendered. In plain words, as my attorney told me, in the future if you have any doubt as to the honor and moral obligation of the factory or corporation, and you want to be legally secure for your bill, then get them to acknowledge their legal obligation to you in writing. You will pardon me if I ask you to read my criticism on the decision of the Court of Appeals in my article above referred to, because I believe it will be a financial lesson to you, if not an intellectual treat.

It is not my intention to report any cases, but shall now close this paper by summing up briefly the best and most rational method of handling and treating surgical emergencies to the hand of the factory employe.

1. Control the hemorrhage.
2. Remove all foreign bodies, as dirt and grease, by scrubbing with Synol soap and plenty of hot water.
3. Give nature a chance by doing patchwork.
4. Suture the nerves and tendons with sterilized catgut.
5. Use aseptic materials and dressings.
6. Avoid meddlesome surgery, and do not disturb first dressing if possible for one week. Watch the pulse and temperature.
7. Practice conservatism and utility.
8. Use some good dry antiseptic powder, as factories object to the odor of iodoform about the premises; or use odorless iodoform.
9. Amputate as a dernier resort.
10. Keep away from the courts, and give the shyster a wide berth.

LOUISVILLE.

DYSMENORRHEA.*

BY RICHARD T. YOE, M. D.

Member of Louisville Society of Medicine, Fellow Edinburgh Obstetric Society, Lecturer on Diseases of the Chest and Physical Diagnosis, Hospital College of Medicine, Louisville, Ky., etc.

There are few subjects which are better fitted to be discussed by physicians than the one I have the pleasure of bringing before you to-night. Few diseases are oftener brought before the family physician for his advice, and the specialist's consultation work is largely made up of it; and perhaps there is no question that is discussed more by the profession as to cause and treatment than this one, so it is well that this Society should have an opportunity of discussing so vexed a question.

In olden times it was taught, not only by the laity but by the profession, that this disease was an inheritance of original sin, and must be borne with Christian fortitude. In this way many women went through life as invalids during part of each month. The intensity of the pain varies greatly in different people; in some it may cause invalidism, while in others it may only cause marked uneasiness. In all cases we must find out how much the pain interferes with the patient's usual duties: find out at what time the pain comes on—before, at, or after the flow begins.

We know very little of the real cause of dysmenorrhea, but in many cases of certain existing pathological conditions we know the uterus is erectile, and that the decidua menstrualis is several times thicker than the mucous membrane of the uterus and that metritis or an abnormal anteflexion will prevent the erection, and expansion of the womb will cause as intense pain as is caused by chordee in the male. The pain that we have in dysmenorrhea is either in the womb, ovaries, or adnexia, but is sometimes referred to other parts of the body at a distance from these organs.

We must in the first place divide our patients into two general classes, married and single, and divide these into the rich or well-to-do and the poor. In all married women we should request an examination (and I have found but few cases that would object to it), while if single we should hesitate to make the examination unless there is great pain, and not then until we have tried all medicinal remedies and failed, and then we should get the consent of the mother, or some one

*Read before the Louisville Society of Medicine, July 7, 1902.

who has authority over the patient. There is great difference in treating the rich or well-to-do and the poor; the one you can put to bed for rest and they can have all the comforts of life, while the poor can not go to bed, but have to stay up to do the housework, or else go to the workshop or kitchen and stand on their feet all day. In the one you can frequently get good results, while in the other internal and local treatment will do no good.

It seems to me that each writer has a different classification for this disease, but I think it can be considered under three heads, congenital, inflammatory, and obstructive. Taken together or separately, they should be considered at all times as pathological. In normal menstruation, if we make an examination we can feel the arching of the fornices, indicating the contraction of the uterus, and in this way we can infer that the debris is expelled from the womb.

There are two important subjects for us to discuss. First, are we able to cure or relieve this condition? Second, with our knowledge, are we justified in treating this condition locally? To both of these the answer should be in the affirmative as a rule, but always look to the cause.

In the congenital form we have the non-developed uterus, small cervix, and pinhole os, which looks forward and downward. Fritsch says: "In the new-born child the uterus has thin walls and is flexible; the intra-abdominal pressure acts on the posterior surface of the fundus and produces ante flexion. This action is counteracted by the bladder, on which the uterus is as it were molded. Where the uterus remains small and thin-walled it does not offer such a large surface to the bladder, so as to be raised by it and have its flexion undone; accordingly, a pathological degree of ante flexion is produced."

In the inflammatory kind we have many causes: Metritis, endometritis as a result of infection, inflammation of ovaries, tubes, rectum, and bladder. Congestion of the utero-sacral ligament is one of the most frequent; it sets up cellulitis, and we have a pathological ante flexion due to the cervix being pulled upward and backward, throwing the fundus forward. We may have pain coming on before, at the time, or after the flow begins. If the inflammation be confined to the ovaries or tubes the flow will give great relief, and the pain is termed premenstrual; or if we have metritis or endometritis it may be premenstrual and at the same time it may continue during the entire time, by the contraction of the walls of the uterus or by the swollen mucosa causing a

closure of the internal opening, which we may term a combined type. In the same way will ovaritis with endometritis give the combined type. Many of the constitutional diseases, such as syphilis, rheumatism, anemia, chlorosis, gout, etc., will cause dysmenorrhea.

In 1723 Morgagni first described membranous dysmenorrhea, which is an inflammatory condition, its causes not yet being perfectly understood. It is characterized by a part or the whole of the mucous membrane passing at the time of menstruation.

In the obstructive variety we may have the following as causes: Ante flexion or retro flexion and version; stenosis, constipation, fibroid tumor, or tumor of pelvic bones, or other growths; tumors of ovaries or tubes pressing on womb; coagulation of blood in womb, causing over-distension of the walls. As a rule, in the obstructive variety we have the pain coming on at the time or just before the flow begins, or it may continue during the whole time of menstruation.

W. A. Freund says: "In atrophy of the womb and ovaries the blood-vessels become narrowed in proportion to the pressure of blood, causing pain."

Professor Skene asserts that "strong, healthy girls sometimes have dysmenorrhea that is not dependent upon the sexual organs, but is purely hysterical or nervous in origin. Diseased or abnormal nervous systems can be the sole cause of menstrual abnormality. The neuralgia is quite common, generally from the debilitated condition of the system, and these symptoms gradually increase until time of menstruation. Pain, localized and agonizing in form, will, if not cured, undermine the health."

The pain in the obstructive variety begins in the pelvis and radiates to the back, groin, and back of legs, and may increase or decrease as the flow increases, and with this we may have vomiting, hiccough, headache, hysteria, or delirium as pain increases. All of these are of a serious nature, and should be treated as such. Some of the best writers claim that the cause of dysmenorrhea is mechanical only, but I think that they are mistaken. A very large majority of those who have dysmenorrhea are also sterile.

Treatment. In the congenital form, the treatment is by massage by the bimanual movements, or else introduce a sound in the uterus with hand on the abdomen and give massage; give general tonics, outdoor exercise, horseback riding, hot and cold baths, etc. If these do not benefit the patient we must then advise marriage, which will stimulate the circulation and nerves to better action and growth.

In the inflammatory form we must find the cause; in many of the cases due to disease of the ovaries or tubes we must operate by removing them before any relief is obtained. In many of these cases I have gotten good results from the following:

R Acidi borici, ʒij;
 Tr. iodini, ʒij;
 Fld. ext. Pinus Canadensis (white), ʒi;
 Glycerinii, q. s., ad., ʒiii.
 M., ft. solv. Sig. Apply to cotton and use as directed on going to
 bed, and remove next morning.

Use a hot douche before applying and after removal. If due to rectal disease, we must cure that; if due to endometritis, curette and apply Churchill's compound, tincture of iodine, or a strong solution of carbolic acid on absorbent cotton to the inside of the womb; keep patient in bed as long as possible, using a hot douche twice a day; put patient on a good general tonic, with iodide of potassium, and give such sedatives as the bromides, hyoscyamus, gelsemium, etc. If due to an obstruction in the shape of a tumor, remove it; if a displacement, rectify it; if ante flexion or version, tampon anterior of uterus with absorbent cotton or antiseptic gauze; if backward displacement, place in the anterior position and adjust a Hodge-Smith pessary. The stem pessary should not be allowed in the physician's office, much less in the patient's vagina.

In the stenotic form we should dilate either with tent, hard rubber bougie, or by forcible dilatation or incision. My preference is forcible dilatation under chloroform. At the same time curette thoroughly and apply iodine to the inside of womb, using hot douches twice daily; order hot baths, etc. The incision is not now used so frequently as formerly, but in some cases it is advisable. Medicinal treatment does little good in these cases except to build up the general health. One of the most potent remedies we have in all cases is electricity, the negative pole placed in the uterus and the positive on the abdomen, on the clay pad, using from fifty to two hundred milliamperes twice a week, or as often as the physician thinks best, keeping the patient always in the recumbent position from thirty to sixty minutes.

LOUISVILLE.

THREE CASES OF PUERPERAL CONVULSIONS.*

BY R. B. GILBERT, M. D.

Professor of Diseases of Children, Medical Department University of Louisville, and Staff Physician to the Obstetric Ward of the Louisville City Hospital.

The technical term "eclampsia" is from the Greek, and means to shine or burst forth, from the suddenness of the attack. To the obstetrician the term implies one of the most dangerous complications of pregnancy.

In the management of over one thousand obstetric cases it has been my good fortune to have seen but few of puerperal convulsions. Within the past two years three severe cases have occurred in my practice, a brief account of which may be of interest.

About 9 o'clock in the evening of July 10th, two years ago, I was called to see Mrs. M., a lady thirty-eight years of age, in the seventh month of her first pregnancy. She said she wished to make my acquaintance and engage my services for her approaching confinement. She added: "I wish you to give me something for palpitation of the heart, shortness of breath, and swollen feet." On examination, I found each condition as she had described. At once I suspected albuminuria. The urine was immediately tested and found to contain a large amount of albumen. Active purgatives and diuretics were ordered, and on leaving the house I informed the husband of the apparent gravity of the case. At 5 o'clock the following morning I was hastily summoned, to find her in a terrific convulsion. Chloroform was promptly administered, which temporarily relieved the spasm. Within thirty minutes another convulsion equally as severe as the first one came on. A consulting physician was called in. We decided not to bring on labor, but to induce free elimination by the bowels and kidneys. The medicines given were Clutterbuck's elaterium one-fourth grain and digitalin one-fiftieth grain, at once; within two hours the dose was repeated. The convulsions continued to come on at intervals of about half an hour and the woman became a raving maniac, requiring the constant administration of chloroform to keep her in bed. Copious watery stools began to pass in about three hours after the first dose of medicine had been given, after which the patient could be controlled without chloroform. She slept soundly for four hours, after which she awoke feeling greatly prostrated but calm and rational. No

* Read before the Brashear Medical Society, at Taylorsville, Ky., July 15, 1902.

further medication except one-fiftieth grain doses of strychnia and digitalin at intervals of six hours were given for several days. The albuminuria rapidly disappeared and convalescence was rapid and good. The fetus had ceased to move. Four weeks after the eclampsia she was delivered of a dead and shrivelled fetus, and soon regained her usual health.

The second case, Mrs. F., occurring last August, was a lady thirty-five years of age, in the ninth month of her fourth pregnancy. She called my attention to her swollen, dropsical feet, and shortness of breath on exertion. Examination of the urine showed a large per cent of albumen present. Purgatives and diuretics (infusion of digitalis and Epsom salts) were prescribed; only a few doses had been taken when labor began. Within an hour after the first labor pains, which were not strong, the patient complained of intense headache and remarked that she could not see well. Edema about the face and eyelids came on rapidly. She now had one severe convulsion, after which she passed into a comatose condition and labor pains ceased entirely. A consultant was hastily called in. We gave high enemata of salt solution and administered digitalis, nitro-glycerine, and strychnia hypodermatically in a vain attempt to sustain the failing heart. The child in utero could be felt moving vigorously. Realizing as we did that the mother was doomed, we rapidly dilated the mouth of the uterus and applied the forceps, hoping thus to save the child. Delivery was quickly completed, the child being alive and strong. The mother remained in profound coma, which ended in death six hours after being delivered.

The third case occurred four weeks ago. Mrs. W., twenty-four years of age, in the ninth month of gestation, complained of headache and shortness of breath. She had no swelling of the feet or puffiness of the eyelids. The urine contained a small per cent of albumen. I ordered for her a mixture of acetate of potash and spirits of mendereri, of which she took only three doses. Four days afterward labor began, and progressed slowly but to all appearances normally. After being in labor about three hours she began to complain of headache, which caused me some anxiety, yet we hoped for and confidently expected a speedy and safe delivery. Suddenly she had a violent convulsion, which we promptly relaxed with chloroform, only to be followed by another and another in rapid succession. Counsel was asked for and quickly obtained. We at once began eliminative treatment—purgatives and diuretics. In this case two-drop doses of croton oil in mucilage were

given by the mouth and one-fiftieth grain of digitalin hypodermatically; thirty-grain doses of bromide of potash were also given every two hours. Immediate delivery was determined upon, and while she was profoundly anesthetized with chloroform I applied forceps and hastily delivered the infant, living and fairly strong. The croton oil began to act freely about three hours after the first dose; the flow of urine also perceptibly increased in quantity. The convulsions continued to recur at intervals of half an hour, but less severe, for ten hours after delivery, after which the patient slept soundly without chloroform for six hours. On awakening she was rational and composed, though greatly fatigued. The temperature at no time exceeded 102°. Her recovery was rapid, the albuminuria disappearing in six days.

The exact cause of albuminuria in pregnancy is as yet an unsettled question. The theory that it is due to pressure upon the renal veins is hardly satisfactory. The presence of albumen in the urine is doubtless the cause of the convulsions.

The history of these cases warns us of the grave responsibility that rests upon the obstetrician. His responsibility begins long before the day of confinement. The urine should be repeatedly examined during the latter weeks of pregnancy, and upon the appearance of albumen vigorous treatment and proper diet should be enforced.

Hydrogogue cathartics and active diuretics are the rational treatment for the albuminuria, and chloroform anesthesia (not ether) for controlling the convulsions.

LOUISVILLE.

ACUTE ARTICULAR RHEUMATISM.*

BY J. J. WAKEFIELD, M. D.

Acute articular rheumatism or rheumatic fever is at the present day usually defined as an acute, infectious, non-contagious disease. The trend of opinion by an increasing number of writers and observers is toward the theory that acute rheumatism is of infectious origin. Those who have watched closely the clinical history of the disease have observed cases that seem to support this theory; that is, the rheumatism associated with gonorrhea and also that seen in the closing days of scarlet fever might be taken as examples.

* Read before the Brashear Medical Society, at Taylorsville, Ky. July 15, 1902.

A number of investigators claim to have found a specific micro-organism, while there are others who claim that they have not been able to demonstrate a constant pathogenic germ. There are two ways of proving that a disease is infectious by direct evidence; that is, by the actual demonstration of the causative agent, and by indirect evidence, which rests largely on analogy. Those who claim to have demonstrated the existence of the specific germ, and have made cultures of it, have not been able to reproduce in the lower animals the typical phenomena as seen in the human. While this fact may not prove its non-infectious character, it seems to leave the cause of rheumatism yet to be demonstrated.

The theory of the nervous origin of rheumatic arthritis at one time proclaimed by some very distinguished observers, among the number the eminent Charcot, has I believe been abandoned. The lactic acid theory has been more tenaciously adhered to, clinicians claiming to have been able to produce rheumatism by injecting or administering lactic acid. Later this theory has been modified by some observers, who have replaced the lactic with the uric acid, thus summing up the matter. It seems that the question as to the cause of rheumatism has not yet been settled.

Acute rheumatism prevails oftenest in the latter part of winter and early spring. Young adults are most often affected, a larger percentage being males, which is probably due to the fact that males are more exposed to the sudden changes of weather. Heredity plays an important part, as certain families are peculiarly liable to the disease. The onset of the disease is not characterized by constant symptoms. The fever and joint inflammation are sometimes preceded by languor, wandering pains in joints and muscles, loss of appetite, and disturbed digestion. In many cases there is a chill or repeated chilliness for a day or two, followed by pain and inflammation in the joints. The picture is now familiar to the physician. The pain varies from slight soreness or discomfort to the most excruciating suffering, is always aggravated by motion or pressure, and is at times so severe that the slightest touch or weight of bedclothes causes the most intense suffering. The peculiarity of rheumatism is its tendency to involve one joint after another, often rapidly leaving one joint and quickly affecting another. One or more joints may be involved at first. It is common to see one ankle affected at first, then the opposite ankle, followed by the knee on that side and shortly by the opposite knee,

then in succession the wrists and elbows, and so on until all the joints in the extremities have become involved.

The pulse in the early stages of rheumatism is only moderately accelerated (90 to 100), is bounding and sometimes hard; the urine is scanty, high colored, excessively acid, and precipitates on cooling copious urates resembling red sand; the skin is usually covered with copious perspiration of an acid odor; the tongue is moist, white, and furred. The temperature is usually moderate, ranging from 101° to 103° , and influenced by profuse sweats, though it may run much higher; especially is this the case if complications arise. I will mention only two complications (if they can properly be called complications), endocarditis and pericarditis, as they are the most common ones, occurring, according to some authorities, in about one fourth of the cases; endocarditis is the more common of the two. The heart involvement gives rise to no particular symptoms at first, but it should be carefully watched. The first symptoms of heart involvement are precordial distress, an anxious expression and pallor of face, an accelerated pulse and disturbed rhythm, cough, and dyspnea.

Treatment and Management. The salicylic acid or its compounds best meet the indications for medical treatment; I prefer the sodium salicylate. It should be given in full doses, fifteen or twenty grains every three or four hours for several days, or during the active stage of the disease. This can be reduced after the more acute symptoms have subsided, or in case of unpleasant effects, as nausea, ringing of ears, fullness of head, etc.; it can be supplanted by bicarbonate sodium or potassium or other alkaline treatment. The bowels should be kept free by the use of saline purgatives; the heart should be guarded by strychnia, strophanthus, and digitalis.

The patient should be kept in bed between blankets; morphia or some other form of opiate should be given to relieve pain if required. The joints should be swathed in cotton batting or wool. Blisters above and below the affected joints often afford marked relief. In cases where the heart is involved, blisters over the region of the base seem to act beneficially. The diet should consist principally of milk. The patient should be kept in bed, free from excitement, until all symptoms have subsided and the heart sounds and rhythm have been normal for some days, and certainly no manual labor should be engaged in for many weeks after recovery.

THE GALL-BLADDER.*

BY J. LIVELY JOHNSON, M. D.

Author Johnson's "Technique of Operative Surgery"; Ex-President Louisville Society of Medicine; Member of Mississippi Valley Medical Association; Member of Kentucky State Medical Association; formerly Lecturer on Surgical Anatomy, Kentucky School of Medicine, Louisville, Ky.; Originator of Johnson's End-to-End Anastomosis of the Intestines.

It is unnecessary to state that the operative technique of the gall-bladder is of comparatively recent origin; nevertheless, its practical significance is destined to become an important factor in the surgical world. Only in the last decade have diseases of the gall-bladder emerged from the obscurity which has so long baffled and perplexed the profession; but under the influence of the strong searchlight now beating so fiercely upon the scientific world the gall-bladder, with its attendant diseases, has not escaped the vigilant scrutiny of pathological search.

With increasing wisdom, the result of scientific investigation, we may no longer err in our diagnosis of diseases of the gall-bladder. Symptoms of disease of the gall-bladder are numerous, and may be mistaken for any one of a number of other diseases. Gall stones, however, may exist indefinitely without marked symptoms.

Gall-stone colic never occurs while the gall stones remain in the gall-bladder, and it is only when attempting to pass through the cystic and common ducts that colic and jaundice are present. Jaundice may be due, however, to pressure by tumors upon the bile ducts, and from other causes.

Pleurisy is occasionally mistaken for gall-stone colic, as is also lead colic and gastric ulcer. In lead colic is found the characteristic symptoms of lead poisoning, this disease almost invariably occurring in the male. In gastric ulcer the pain radiates to the left shoulder, while in gall-stone colic the pain is most severe in the right. This I regard as a practical as well as an important point of differential diagnosis.

Vertigo, slight syncope, temperature, chills, and sweating are symptoms frequently accompanying diseases of the gall-bladder. The knowledge that some catarrhal condition of the gastro-intestinal tract exists is sufficient evidence to arouse suspicion of gall-bladder disease, and this is especially true in women, as the female is four times as frequently the subject of gall stones as is the male.

* Read before the Kentucky State Medical Society, May 7-9, 1902.

Statistics show that twenty-five per cent of all women over thirty-five years of age are the victims of gall stones. It is claimed that at least two millions of the inhabitants of the German Empire are suffering from the effects of gall stones, and that one million more present symptoms of this disease. It has been further stated that at least ten per cent of the population of the entire globe are the subjects of gall stones or of gall-bladder disease.

In an examination for gall-bladder disease great care should be exercised to differentiate disorders of the gall-bladder from diseases of the pluera, gumma of the liver, intercostal neuralgia, nephritic colic, floating kidney, etc. The majority of cases of infection of the gall-bladder are usually accompanied by symptoms simulating typhoid fever, and quite frequently an attack of acute cholecystitis follows this fever. In connection with gall stones we nearly always find atrophy of the gall-bladder, and particularly is this true when there is occlusion of the cystic duct due to a stone.

In six hundred and fifty-seven cases of gall stones, 73 per cent showed atrophy of the gall-bladder. Statistics demonstrate that 80¼ per cent of all gall-stone cases indicate atrophic changes in the gall-bladder. Experience teaches that many obscure cases of chronic dyspepsia may be traced to diseases of the gall-bladder.

Two of the most important and most pointed symptoms of disease of the gall-bladder consists of the expiratory groan and the temperature angle. The first of these is elicited by placing the patient in the supine position, directing a deep inspiration, and at the same time pressing the fingers well up under the free border of the ribs, on the right side. It is very perceptible that the deep inspiration taken by the patient depresses the diaphragm, thus bringing the gall-bladder in contact with the fingers.

If disease of the gall-bladder is present an expiratory groan escapes from the patient, otherwise there is no pain on pressure. The second is the temperature angle, which is always indicative of sepsis, due to an inflammatory condition and pus formation in the gall-bladder. The temperature ranges from 100° to 104°, and is marked by its sudden rise of one or more degrees, where it remains stationary for a few days and as suddenly drops to about normal, where it stands for an indefinite length of time, then as suddenly rises again.

These two symptoms, if present, are conclusive evidence of sepsis arising from pus formation in the gall-bladder, and demand immediate

operation. A blood examination with pus in the gall-bladder, as elsewhere, reveals a neutrophelia. Adhesions of the gall-bladder to the stomach or other abdominal viscera may cause pain where there is no disease of the gall-bladder *per se*. This, however, demands operation, for the relief of any tension to which the viscus may be subjected. Operate as soon as possible after a diagnosis of pus in the gall-bladder has been made, as the viscus is likely to rupture at any moment, or to become adherent to the stomach or intestine. The prevalence of gall stones is far more extensive than is generally suspected. Many cases exist for months and even years without inviting a diagnosis.

At the necropsy upon our eminent contemporary, the wise and lamented Fenger, his gall-bladder was found to contain three stones, of the presence of which he doubtless had not dreamed. A recent operation upon a patient sixty years of age revealed three very large stones. In this case not a single symptom of gall-bladder disease had presented until three days prior to the operation. In this patient, contrary to the rule, the gall-bladder was enlarged to several times its normal size. It was thought best to dissect out the entire mucous membrane of the gall-bladder down to the mouth of the cystic duct, which was done, and the gall-bladder completely obliterated. The patient made a prompt and uneventful recovery, leaving the hospital at the expiration of three weeks.

I shall refer to the medicinal treatment of gall stones only to call attention to its utter inability to remove them, either by expulsion or dissolving of the stones. There is no remedy known to the profession, the efficacy of which will not destroy living tissue, that is capable of dissolving gall stones in the test tube. The administration of olive oil and similar products may occasionally aid the expulsion of gall stones, but these instances are so rare as to preclude comment.

A specific diet as a curative agent is unimportant in diseases of the gall-bladder, but such food as will maintain the stomach and bowels in the best condition should be recommended. Loose clothes, exercise, and massage are also important accessories to the comfort of the patient.

An operation should be performed for the removal of gall stones as soon as a diagnosis is made, as ulceration, adhesion, and perforation, with expulsion of gall stones into the intestine, may occur at any moment. Should this complication arise the patient is then liable to impaction of enteroliths, varying in size from that of a filbert to a stone quite sufficient to completely occlude the intestinal tract.

While in the intestinal canal the stone gradually increases in size by the formation of concentric layers of phosphate of ammonia and magnesia. I recall from an early experience the case of a woman, for several months a sufferer from severe abdominal pains, who passed three large enteroliths of a jagged appearance, followed by profuse and repeated hemorrhages from the bowels, thus reducing her vitality to a very low ebb. Had my familiarity with the symptoms of gall stones been sufficient to make a diagnosis, followed by prompt operation, I might have saved my patient much suffering and prevented perforation of the gall-bladder and escape of the gall stones into the alimentary canal, thus removing any possibility of the stones passing into the peritoneal cavity, exciting general peritonitis, a condition almost invariably, with or without immediate operation, producing death.

Among the indications demanding operation upon the gall-bladder I shall mention the following: Gall-stone colic, sepsis, empyema of the gall-bladder, jaundice or obstruction of the bile ducts, fistulous openings, and fat necrosis.

In carcinoma of the gall-bladder operation should not be attempted. The morphine habit is frequently acquired as the result of the surgeon's inability to recognize and operate upon these cases at the proper time. It is sometimes very difficult to examine the gall-bladder, even after the incision is made through which it is exposed, because of its atrophic and retracted condition.

Mayo, of Rochester, Minn., has perhaps done more gall-bladder work than any other American surgeon with the possible exception of Murphy, of Chicago. Of three hundred and twenty cases operated upon by Mayo, the gall stones were found outside of the gall-bladder and ducts in thirteen cases, due to perforation.

When there is occlusion of the cystic duct due to a firmly impacted stone, or when the mucous membrane of the gall-bladder is extensively diseased, the gall-bladder should be obliterated by thoroughly dissecting out the entire mucous membrane as far down into the cystic duct as possible, where it is ligated and cut off; or the peritoneum may be split along each side of the cystic duct and the duct ligated. There is practically very little danger of post-operative hemorrhage following dissection. Mayo, from his wide experience, reports one case with slight hemorrhage which continued for twelve days.

The recurrence of gall stones after operation is exceedingly rare; however, in some cases the pain continues, the cause of which is yet

unknown. Cases proving fatal from disease of the gall-bladder invariably present symptoms of kidney involvement at least twenty-four hours before death.

The presence of steapsin in the urine is proof of fat necrosis, which is conclusive evidence of the presence of gall stones. Patients with ecchymotic spots, extreme jaundice, or malignancy are poor subjects for operation, and it is from this class of cases that we derive our mortality. It is essential that the technique of gall-bladder operation and its after-treatment should be well understood. Following a thorough preparation of the patient, the field of operation is covered with the Murphy rubber dam, a piece of adhesive rubber tissue eight by ten inches in size. Through this dam an incision is carried down through the rectus muscle to the peritoneum; this is picked up and incised between two tissue forceps, and its cut edges are clamped with hemostatic forceps to prevent retraction. A search is now made for the gall-bladder, and when found it is seized by its tip with a pair of gall-bladder forceps and brought out through the wound for an inch. The gall-bladder is then stitched with a continuous catgut suture to the parietal peritoneum, beginning at the superior angle of the wound with a suture armed with two needles, one of which is carried around the outer half of the circumference of the gall-bladder, the other around the inner half to the inferior surface of the gall-bladder, where they are securely tied, anchoring the gall-bladder to the parietal peritoneum, completely closing off the peritoneal cavity. The tip of the gall-bladder is drawn well up by the forceps and a coffer-dam of iodoform gauze placed snugly around its free end, after which the tip of the gall-bladder is stitched with one silk suture on each side to the skin. This accomplished, the gall-bladder is then opened and its contents partially or completely evacuated. In the majority of cases, however, it is preferable to remove only a limited number of the stones at the primary operation, allowing the others to come away gradually as the drainage proceeds.

The dressing consists in leaving the rubber dam in place for the protection of the skin throughout the whole of the after-treatment, it never causing the slightest dermatitis, being prepared as is the oxide of zinc adhesive plaster. A rubber drainage-tube, large enough to snugly fill the opening in the gall-bladder, is passed to its bottom, secured by a safety-pin, and left for drainage. To the rubber drainage-tube a few feet of rubber tubing is attached, to convey the bile and other debris into the waste bucket. Carefully placed around the drainage-tube

is packed the ordinary cotton and gauze dressings. The patient is placed in bed in a semi-reclining position, at an angle of forty-five degrees, to insure perfect drainage, and it is remarkable with how little inconvenience the convalescence is attended.

At the end of from three to five days the wound is inspected for the first time, and not infrequently with the withdrawal of the drainage-tube numerous stones come away and profuse discharge takes place. A search is then made for any stones that may have remained in the gall-bladder; when found, especially if impacted in the mouth of the cystic duct, they are often very difficult of extraction. In some cases it requires hours of the utmost patience upon the part of the surgeon to extract an impacted stone from the mouth of the cystic duct. This work is not accomplished by mere touch alone, but by inspection through the speculum. The stone may in this manner be brought as perfectly into view as if held in the palm of the hand. If after about twenty minutes' work the stone is not dislodged the drainage-tube is replaced and the patient is returned to bed, when the stone is left to nature until the next dressing, three or four days later, when another effort is made to dislodge and remove the stone. This procedure is continued with exceeding care until all of the stones have been extracted. In some cases many weeks are required to accomplish the desired result.

Through the electric or common speculum, with a good light, the mucous membrane of the gall-bladder, and even the mouth of the cystic duct, may be thoroughly inspected, and when relieved of all stones and disease the drainage-tube is removed along with the coffer-dam, and the wound permitted to close spontaneously, it not being good practice to attempt by surgical means to close the fistulous opening.

LOUISVILLE.

PHLYCTENULAR INFLAMMATION OF THE CORNEA.*

BY M. F. COOMES, A. M., M. D.

*Professor of Physiology, Ophthalmology, Otology, and Laryngology in the Kentucky School of Medicine ;
a Member of the American Medical Association, the Kentucky State Medical Society, and the Louisville Clinical Society ; Ophthalmic Surgeon to Louisville City Hospital and the Kentucky School of Medicine Hospital ; Consulting Ophthalmic Surgeon to
Sts. Mary and Elizabeth Hospital ; Ophthalmic Surgeon to St. Anthony's Hospital, etc.*

This disease is confined almost exclusively to children from two to fifteen years of age ; sometimes it is met with in adults.

Causes. The older practitioners in ophthalmology were inclined to believe that it was a blood discrasia, and they were not far from being correct. A micro-organism resembling the coccus flavus desidens has been found in connection with phlyctenular inflammation of the cornea, but while this is true I am of the opinion that the subject of this disease is always in a state of physical depravity when the disease manifests itself, therefore the soil must be in a proper condition before the germs develop and bring about the characteristic manifestations.

Symptoms. Congestion of the conjunctiva, either general or in localized areas, is always one of the conditions present in this disease ; in fact, this is the last of the symptoms to disappear. The redness of the covering of the eyeball in many cases is very mild, while in the aggravated cases the congestion is violent, and along with this active congestion there is always photophobia (intolerance of light) and excessive lacrymation. In many of the typical cases the child, if it be only a few years old, will bury its head in the pillow at daylight and keep it there until twilight unless removed by force. This picture, no doubt, is familiar to most of you. In such cases the ulceration of the cornea is usually deep or near the center, or a large area of ulceration or a number of small ulcers will be found to exist in most cases of this kind. The depth of the ulceration and the surface area of tissue involved will always govern the severity of the symptoms ; that is, the more tissue involved the more severe the symptoms. There is frequently an eczematous condition about the nose and face, which at times is extremely annoying to both patient and doctor, but which should be treated as an ordinary eczema.

Prognosis. The prognosis of the disease will depend altogether on the violence of the attack and the amount of corneal tissue involved,

* Read before the Brashear Medical Society, at Taylorsville, Ky., July 15, 1902.

and the manner in which the case is handled. With proper care and prompt, active treatment the most of these cases recover with good vision.

Treatment. This is necessarily local and constitutional. The local treatment should be directed to the relief of pain and the arrest of the progress of the disease; that is, of the destructive ulcerative processes that sometimes occur in connection with these cases. To determine the condition of the ulcer, cocaine the eye with a four-per-cent solution of cocaine and then drop a solution of methyl blue, five grains to the ounce of water, into the eye, when that portion of the corneal surface that is open will be stained a deep blue with the methyl.

The presence and size of the ulcer having been obtained by the staining, the next thing to be done is to touch the ulcer with pure liquid carbolic acid. This is best done by taking an ordinary dressing-probe and dipping the rounded end of it into the carbolic acid and then shake what can be shaken from the probe and finally touch the surface of the ulcer, which should become whitened by the acid. Then some bland oil, as albolene oil, should be dropped into the eye to insure against the excess of acid doing harm. It is very important to stain these ulcers each day, so as to note their progress. If the area of blue is decidedly lessened, then further use of the carbolic applications will not be necessary; but if there is no reduction in the stained area, or an increase in its size, then another application, and so until the healing process begins. Usually it is not necessary to make more than one, or at the most two, applications of the acid.

Atropine is recommended by nearly all authorities, but for what reason I am not prepared to say. It dilates the pupil and lets in an excessive amount of light upon an already highly sensitive retina. A solution of the sulphate of eserine, one grain to an ounce of water, dropped into the eyes every six hours is quite sufficient to maintain a very close pupil and thus cut out the light and stimulate the circulation in the sluggish vessels in the neighborhood of the ulcer, which is an all-important matter in such cases. In extreme cases a four-per-cent solution of cocaine may be used once in twenty-four hours. This, however, should only be done for the purpose of examining the eye. Nurses and mothers should be warned of the great danger of cocaine solutions, as the continued influence of the drug will destroy the cornea in a few hours. I have recently witnessed the loss of an eye by the patient disobeying directions in regard to the use of cocaine. Where

the cases are prolonged it is wise to dilate the pupil every four or five days to insure the freedom of the iris, as iritis might develop in connection with a case of phlyctenular keratitis. Atropine solution two grains to an ounce of water should be used.

Where the photophobia is intense it is often relieved by wrapping the child in a sheet or large towel, so as to secure the hands and feet, and then dip the face suddenly into a bowl of cold water. Of course it produces a very decided reflex action, and in many cases the child will open its eyes in a few minutes and they will remain open for quite a while afterward. Where they are inclined to keep the eyes closed it is a good plan to do this every morning, so as to relieve pressure and give the eyes a chance to cool off, and to let the air into them. The best of diet and tonics should be given in all these cases.

LOUISVILLE.

IMPERFECT OSTEOGENESIS.—Francis Harbitz thinks it doubtful whether true rachitis occurs during fetal life. He holds that the twenty cases, described by as many authors, were cases of imperfect osteogenesis. He describes a case of his own, that of an infant born six weeks before term, dying soon after birth, which was subjected to minute macro- and microscopic examination. The head was a mass of fractures, the clavicles, scapulæ, and ribs were broken; there must have been over one hundred fractures all over the body. Endochondral ossification was much delayed; periosteal ossification somewhat more advanced. The condition shown by the microscope differed greatly from those found in rachitis, syphilitic osteochondritis, and osteomalacia. The cause of the imperfect osteogenesis is obscure. In the case under discussion the umbilical cord was exceptionally short and very fragile, which might indicate insufficient nourishment as the cause.—*Norsk Magazin for Legevidenskaben (Medical Record)*.

PECULIAR CASE OF BLADDER REFLEX.—Duncan P. Anderson reports the case of a man who suffered from attacks which occurred every two to six weeks and were characterized by polyuria and irregular heart action, the latter symptom outlasting the former by about twelve hours. Some of the attacks were so severe that the patient had to urinate and defecate at the same time. Examination gave no definite results except of an enlarged prostate, and by a process of exclusion the author came to the conclusion that the attacks of tachycardia and polyuria were secondary to some reflex from the bladder, brought on by the enlarged prostate. Treatment consisted merely in the withdrawal of residual urine after micturition, and in washing with boric acid. After six months of treatment the interval between attacks was increased from about three to sixteen days to about a month, and the attacks were less severe in character.—*The Montreal Medical Journal*.

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THE KING'S EVIL.

The recent illness of England's uncrowned King has given certain members of the medical profession a great opportunity to get into the lay press, which, we are sorry to say, is becoming entirely too common. The great majority of the doctors who are constantly parading their names before the readers of the lay press are just the fellows who would be the rankest quacks in existence were it not for the restrictions of the profession. The sooner the readers of the lay press and the press itself learns that the doctors who rush into print on every occasion only do so for the purpose of getting a free advertisement the better it will be for the public, for the very good reason that the men who do this are not men who rank at the head of the profession or of the departments in which they work. They are never more than second-rate men, and the great majority of them are very common, indeed.

We of the profession know them, and they know that we always place them just where they belong, but the one idea with these lay press advertisers is to fool the public, for they know that it is one of the ways by which they may replenish their decreasing bank account. Brothers of the profession, do not be deceived by men of this class. Give them their just rating and they will soon be relegated to the shades of professional obscurity, where they properly belong.

As to King Edward's illness, the most that can be said about it from the facts as we have been able to gather them is that it was a



T. B. GREENLEY, M. D.,

Meadow Lawn, Kentucky.

plain case of appendicitis, which was permitted to run a course that to say the least was very hazardous to the distinguished patient. Until we are fully advised as to the actual course of the disease we will certainly lay no blame upon the eminent surgeons in charge of his case, as we are sure that if they had been free to act as they choose in the matter the case would not have been permitted to pursue the course it did. Here in America experienced surgeons do not permit cases of appendicitis to take such course as did King Edward's, because of the great danger of a fatal termination. When the abscess is walled off and freely evacuated the chances are fair for recovery, but who can say in any given case that the pus will be isolated outside of the peritoneal cavity? It is a gambler's chance for it to do so, and no life should be thus jeopardized. The early operation, if there is no positive contraindication, offers the greatest opportunity to save life. Remove the appendix, and then the patient has had the greatest benefit that surgical science can give him. Hesitation and delay, as a rule, are dangerous.

SURGICAL INTERFERENCE IN SO-CALLED GRANULATED EYELIDS.

If we were called upon to state what branch of ophthalmology the ophthalmologists were most deficient in we would most certainly say diseases of the lining of the eyelids. It is astonishing how many ophthalmologists fail to recognize the difference between granular lids, trachoma, and papillary hypertrophy, and yet there are no three diseases affecting any organ of the body more widely different in their pathology.

The true granular lid is nearly always of traumatic origin. To say the least of it, in the true granular lid there is always a breach of continuity in the lining of the lid. With this knowledge of the cause and actual condition, it is needless to say anything concerning the treatment of such cases further than to say that a liberal supply of carbolized oil and frequent massage of the lids will prevent adhesions between the palpebral conjunctiva and the covering of the eyeball.

Trachoma is a disease that is contagious and difficult to cure and very dangerous to vision in many cases, even where the disease is promptly recognized and properly treated. This disease is neoplastic in its nature, the little frog spawn-like bodies are entirely foreign to any of the tissues entering into the construction of the lining of the lids. The disease being contagious may become epidemic, and to that end

special legislation has been enacted in many localities to prevent its spread.

In the treatment of trachoma surgical interference as well as therapeutic agents is demanded. In all cases kappizing is demanded, and in many cases where there is spasm of the orbicularis palpebrarum muscle canthotomy is absolutely essential if the best interest of the patient is to be obtained.

Papillary hypertrophy is by far the most frequent of the three conditions; it is frequently confounded with trachoma, and to us without any apparent good reason. The absence of the frog-spawn-like bodies and the elevated papillæ and the more decided scarlet hue of the conjunctiva enables us to differentiate. The application of a solution of adrenalin chloride, 1 to 5000, will define the trachomatous bodies if there be any present, and in this way a diagnosis is readily made. In papillary hypertrophy we have simple enlargement of the papillæ which are scattered over the surface of the conjunctiva. There is nothing in the way of neoplastic deposit, such as is found in trachoma, and there is no reason for confounding them.

In this, above all other forms of lid disease, is surgical interference demanded. Spasm of the orbicularis palpebrarum muscle exists in nearly all cases, and it is safe to say that canthotomy is of more real value when properly performed in these cases than all the drugs that can be applied. It relieves friction and enlarges the palpebral space, and when that has been accomplished little else is needed, as the tendency of such cases is to get well when the tension and friction has been removed.

Current Surgical and Medical Selections.

CONSUMPTION, THE MOST DANGEROUS COMMUNICABLE DISEASE.—At the meeting of the National Conference of Charities and Correction in Detroit, June 2, 1902, Dr. Baker, Secretary of the Michigan State Board of Health, said: Not one of the common so-called contagious diseases is usually contracted by simple contact of the unbroken surface of a human body with the surface of an infected human body. Therefore the term contagious, implying as it does the spread of disease by contact, should be obsolete. A much better term is the single word communicable.

Of all communicable diseases consumption (pulmonary tuberculosis) is now the most dangerous. More people contract this disease than any other. Therefore anything, any statement, or any influence which belittles the

importance of restricting the spread of consumption does damage in the most vital point to the interests of the public health and safety.

Improper housing and improper feeding of the poor are important evils to be done away with, because they lead to discomfort and lowered vitality and tend to spread disease. But if the germs of tuberculosis were generally restricted any amount of lowered vitality, because of improper housing and improper food, would not cause a single case of consumption.

The essentials for the restriction of consumption are: First, the general recognition of the truth that consumption is the most dangerous communicable disease. Knowledge of that fact is the power without which consumption can not be restricted. It is lack of action because of ignorance of this great truth—that consumption is spread from infected persons—that kills off the improperly housed and improperly fed poor. It is ignorance of that great truth that kills off the rich by tubercular disease in spite of proper housing and proper feeding.

It is the slow but gradual gaining of that precious knowledge by the common people and action governed by that knowledge that is reducing the mortality from consumption as it is being reduced in Michigan.

In order to be most useful to the public it is essential that this important knowledge shall be gained by and shall govern the action of every coughing consumptive, who otherwise is a constant source of danger. Therefore the consumptive should be promptly put in possession of that knowledge. This first essential can not be fulfilled by the public unless every case of well-developed consumption shall be reported to the health officer. Every case reported should be promptly informed how to avoid reinfection of the patient and spreading the disease.

THE TREATMENT OF TYPHOID FEVER WITH SPECIAL REFERENCE TO THE USE OF WATER.—G. W. Boot urges the free use of water by the mouth, by the bath, and by enema. Milk is the best diet, because in addition to furnishing all the proximate principles necessary for the nourishment of the body in assimilable form it furnishes more water than any other form of diet. But plenty of water should be given in addition. In his country practice, where tub baths are out of the question, the author has the patient placed on a rubber sheet, into which he sinks, forming a hollow. A pitcher of water at 80° or 90° F. is poured over him, and the water which accumulates around him is repeatedly soused over him by means of a large sponge, and cold water is constantly added. This reduces the temperature, stimulates respiration, and by change of position prevents hypostatic congestion of the lungs and pneumonia. Purgatives and enemata lessen the amount of infection, carry away the toxins formed in the intestines and eliminated by the bile, remove the toxins eliminated by the intestines, and lessen the local infection by providing drainage for the infected Peyer's patches. They are not contraindicated, but rather indicated, in diarrhea.—*The St. Paul Medical Journal.*

QUININE RASH, WITH REPORT OF A CASE.—H. C. Wood, Jr., reports the case of a woman of thirty-five years, who had taken two days previously, as a tonic, a prescription containing nux vomica and compound tincture of cinchona. Within a short time after taking the first dose she experienced stinging sensations along the forearm. A short time after this these areas became red. When seen, the eruption presented the appearance of a number of spots equally distributed over the extensor and flexor surfaces of the forearm, regular in outline, almost perfectly circular, from two to five centimeters in diameter, deep red in the center, shading slightly toward the periphery, and surrounded by a slight macular rash. The temperature of the skin in the immediate neighborhood was distinctly elevated to the touch. There was, at first, according to the patient's description, some induration around the spots, but this had mostly disappeared when the patient was seen. Some of the spots had already faded and were copper-colored, in contrast to the bright red of those in active inflammation. There is a slight itching. Temperature $99\frac{1}{2}^{\circ}$; pulse 88; no marked constitutional disturbances, no involvement of the mucous membranes. A placebo was ordered, and four days later the patient was seen again. The spots had faded to a marked degree, some of them actively desquamating.—*Therapeutic Gazette*.

IODIC PURPURA WITH FEVER.—The patient in the case, reported by A. Stengel, was a man of twenty-three, who was taking the iodide of potassium for asthmatic attacks, the initial dose being five grains, gradually increased to eight grains, three times daily. Gradually iodic spots appeared, with a fever rising of 101° , but without apparent cause. The withdrawal of the iodide led to a subsidence of the fever and the gradual disappearance of the rash.—*Ibid*.

Special Notices.

THE preparations of "PEPSIN" made by Robinson-Pettet Co. are endorsed by many prominent physicians. We recommend a careful perusal of the advertisement of this well-known manufacturing house. (See third cover page, this issue.)

I AM particularly well acquainted with Cactina in the pillet form, and can speak highly of it as a cardiac tonic and as a remedy for palpitation in dyspepsia.

Birmingham, Eng.

ALEXANDER BRYCE, M. D., D. P. H.

SMALLPOX THERAPY.—The prevalence of a mild type of smallpox throughout the country gives the therapy of that disease especial interest at the present time. Vaccination is, of course, unquestionably not to be overlooked as a preventive measure, but in addition infection may be made much more unlikely, and, where infection has taken place, the course of the disease considerably shortened and shorn of its terrors, by the administration of the valuable antipurulent, ecthol. The Battle Company has just issued a pamphlet dealing with the use of ecthol in this disease. The pamphlet should be in the hands of every physician who may be called upon to treat smallpox. It will be sent to any physician who makes the request.—*Medical Fortnightly*.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

MEDICAL TREATMENT OF CHOLELITHIASIS.*

BY R. ALEXANDER BATE, A. B., M. D.

Cholelithiasis embraces the formation and presence of biliary concretions. Its medicinal treatment is based upon the rationale of its etiology and pathology. Gall stones are chiefly composed of cholesterine. Cholesterine is a product of retrograde metamorphosis, which is held in solution in the tissues by lecithin. Its solution in the circulating fluids of the body is maintained by the alkaline salts and the compounds of potassium and sodium with the fatty acids (Lyman).

So long as the bile remains alkaline the cholesterine is held in solution. If calcium be added to bile it unites with the fatty and biliary acids to form insoluble salts no longer capable of holding cholesterine in solution. An excess of organic acids in the liquids and solids of the body cause a liberation of basic calcium from the anatomical structures in which this substance is contained.

Calcium thus put into circulation precipitates cholesterine from the bile. This excess of organic acids in the system is the so-called "arthritic diathesis" or the "acid dyscrasia" described by the French writers. Consequently, biliary calculi are most common after the age of thirty-five, that is, after changes dependent upon the diathesis have begun.

Females are affected three times as often as males. Naunyn states that 25 per cent of all women have cholelithiasis, and that 90 per cent of these have borne children. Pregnancy, menstruation, tight lacing,

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sedentary habits, and the increased frequency of osteomalacia among females render them more liable to the disease. Pregnancy and menstruation favor the increase of organic acids in the system. Tight lacing causes stagnation of the bile. Sedentary habits lessen oxidation and in osteomalacia calcium salts are put into the circulation. Cancer of the gall-bladder, typhoid fever, appendicitis, and disorders attended with intestinal sepsis are among the frequent causes of biliary calculi. Colloid material, the products of inflammation, and bacteria present in the bile not only favor chemical changes but furnish a nucleus for the deposit of cholesterine.

Recently it has been shown that the bile is so feebly antiseptic that bacteria may live in the gall-bladder a considerable length of time. Gall stones vary in number from one to eight thousand, and they vary in size from a pin-head to a goose-egg. Their formation may take place in the hepatic radicals or in the gall-bladder. Symptoms result only from irritation or obstruction by the calculi. The greatest pain is supposed to result from the spasmodic contraction of the muscular structures upon the stone as it passes through the cystic duct. The obstructing stone usually lies at the termination of the common duct, within the diverticulum of Vater.

The formation of a calculus is likely to be followed by the formation of other calculi, either immediately or at subsequent periods. Thus we find the indications for the medicinal treatment of cholelithiasis are: First, the prevention of the formation of calculi; second, the control of the symptoms and the expulsion of the calculi when formed.

Prophylaxis is applicable to those predisposed but in whom no calculi have been formed, and to those from whom calculi have been removed either by surgical or medicinal means. Prophylactic treatment, then, embraces the treatment of the acid dyscrasia, or the prevention of an excess of organic acids in the system; care of the menstruating and pregnant female, especially after the thirty-fifth year; the removal of all things tending to produce stagnation of the bile; the use of all means to promote its fluidity and outflow; the use of agents promoting biliary and intestinal antiseptics, and the use of lecithin or other solvents of cholesterine in those from whom gall stones have been removed.

An excess of organic acids in the system must be prevented by increasing oxidation in every way. Out-of-door exercise, bathing, massage, etc., and by a diet requiring as little oxygen as possible

and free of calcium salts. For this reason no red meats, tea, coffee, chocolate, tomatoes, strawberries, bananas, nor limestone nor carbonated water should be taken. But the lentils should especially be used, because they not only require less oxygen for their assimilation but even carry oxygen with them. The oxygenated waters, instead of those charged with carbonic acid gas, should be used.

The salicylates promote the fluidity of the bile and together with the terebinthina group perhaps constitute the safest antiseptic. Probably the best antiseptic measures in the gall-bladder are those that prevent biliary stasis and promote normal gall-bladder activity. Local massage is to be especially recommended.

In typhoid fever, appendicitis, and other disorders attended with intestinal sepsis, the terebinthina group perhaps furnish the best prophylactic. They lessen both biliary and intestinal sepsis, besides exercising a somewhat solvent action upon biliary concretions. The treatment of the attack embraces measures for the relief of pain as well as those that facilitate the expulsion of gall stones.

It is estimated that less than fifty per cent of individuals affected with gall stones ever have clinical manifestations. Gall-stone colic is generally conceded to be due to the contraction of the muscular structure upon a calculus as it is forced into the cystic duct, so that in all instances of cholelithiasis attended with pain we are reasonably sure the offending calculus is small enough to have become engaged in the duct itself. Therefore we have positive indications for medicinal treatment.

The first steps in the treatment of the attack must of course be for the control of pain. Anodynes and anesthetics have been used. Coal-tar derivatives, opium, alkaloids, ether, and chloroform have served. Perhaps the speediest relief, with the least undesirable after-effect, is obtained by the hypodermatic use of heroin hydrochloride in combination with atropine. Heroin is more analgesic and less constipating than morphine. Just as when morphine is used, small doses should be frequently repeated, lest the stone pass suddenly and a narcotic rather than an analgesic effect result. The agents assisting expulsion of the calculi may be divided into different classes. The action of one class is due to influence upon the tissues of the biliary tract. The action of the other class is due to influence upon the biliary concretion itself. Those that act upon the tissues perhaps exert a local sedative action, lessening muscular rigidity yet toning up muscular force.

A result is obtained analogous to that of cocaine upon the urethra. A spasmodically contracted urethra may resist the passage of the smallest metallic sound when cold, yet if cocaine, heat, or other local sedative be applied a sound of average size may easily pass. The drugs belonging to the first class are *dioscorea villosa*, *carduus marianus*, *chionanthus virginica*, and probably most cholagogues. The drugs belonging to the second class exercise a solvent effect upon the different component parts of the calculi, and though a solution may not be effected assist in the reduction and molding of the calculi. The drugs representing this second class are lecithin, olive oil, glycerine, the salicylates, ether, chloroform, turpentine, animal soap, nitro-muriatic acid, the succinate of the peroxide of iron, valerianate of amyl, toluylendiamin, pichi, Carlsbad salts, and the alkalies in general.

Lecithin is perhaps the most active solvent of cholesterine known. The action of the various oils are dependent upon the lecithin they contain. At present olive oil affords the chief source for its administration. However, a large manufacturing establishment, in reply to a letter, has informed me that they hope soon to place pure lecithin upon the market. Gall stones composed of cholesterine, when raised to the temperature of the body, may often be molded as putty into any form, according to pressure. If lecithin does not put the cholesterine of the gall stone into solution it may so soften it as to permit this molding. The succinate of the peroxide of iron, hydrated, contains a large proportion of nascent oxygen, so that it is useful both as a prophylactic and an assistant in expelling calculi.

Pichi dissolves the mucus and products of inflammation that bind together the cholesterine and calcareous matter. Thus we see medicinal treatment instituted for the removal of the calculi should embrace the dietetic and hygienic measures suggested under prophylactic treatment, together with the combined use of both classes of drugs suggested as facilitating the expulsion of biliary concretions. In addition to the lentils and oxygenated waters mentioned, eggs, milk (especially buttermilk), whole wheat and corn breads complete the requirements of a diet list. They furnish oxygen, phosphates, and lecithin.

Such local measures as massage, counter-irritants, especially the application of the salicylate of methyl and the use of either hot or cold enemata, are of some service. The internal medication should embrace drugs that favorably modify biliary secretion, that relax the spasmodically contracted ducts, lend tone to normal muscular contractions and

assist in molding calculi when possible, added to drugs possessing a solvent action upon the calculi. Therefore, the ideal prescription would contain lecithin as solvent for the cholesterine, pichi to dissolve the matrix of mucus, and dioscorea to assist expulsion. Perhaps the greatest number of cases reported where gall stones have been obtained has been due to olive oil; the succinate of the peroxide of iron is an old favorite; lately valerianate of amyl and toluylendiamin have been favorably reported. Personally, the use of the salicylates, dioscorea, and olive oil have served best.

A unique case occurring in the practice of Dr. E. S. Swain, of Smithfield, may be found of interest. This case has been reported and the specimens exhibited to the Louisville Pathological Society. Later the specimens were sent to Dr. William Rodman, of Philadelphia. The use of dioscorea and olive oil had been suggested in this case, which proved to be both biliary calculi and abscess. After several days' exhibition of the two drugs about thirty hollow gall stones were passed. The supposition is that the lecithin of the olive oil had dissolved out the cholesterine of the calculi, leaving the shell, composed of biliary and lime salts.

In the surgical section of the American Medical Association, in 1900, some few surgeons took the position that a diagnosis of gall stones was sufficient indication for immediate surgical intervention. However, many surgeons echo the sentiments of A. Chauffard (Year Book of Medicine, 1902), who says "Surgical treatment of hepatic colic is too frequently undertaken before medicinal treatment has been properly tested." Chauffard believes the relief obtained by surgical means is likely to be only temporary, and that the factors which previously caused the formation of calculi still remain present.

The intention of this paper is to urge the use of prophylactic measures in those predisposed by diathesis, sex, age, occupation, by intestinal or hepatic disorders favoring biliary stasis and sepsis and in those previously affected with biliary calculi.

It is not claimed that all cases of cholelithiasis can be cured by medicinal means. It is desired to emphasize the fact that internal medication, either alone or combined with surgical measures, must be instituted before a radical cure can result. In support of this it may be mentioned that only a very small proportion of cases of cholelithiasis ever require surgical intervention, and as mentioned by Chauffard the etiologic factors remain and gall stones may recur after surgical treatment.

Furthermore, any inflammatory process or any foreign matter in the gall-bladder favors the formation of calculi. A case is reported where a secondary operation showed a portion of a stitch introduced at the first operation formed the nucleus of the subsequent calculus. Fiedler states that symptoms of gall stones occur after operative procedures in fifteen per cent of cases. Kelly shows that upon one in every seven cases operated upon by Kehr a second operation was performed. Again, the very occurrence of pain suggests the calculus is small enough to become engaged in the duct, and therefore is likely to be modified by medicinal agents. However, it may be said surgery and medicine are complementary. Neither is independent of the other. Combined, they accord a scientific and perfect treatment to cholelithiasis.

LOUISVILLE.

SURGICAL TREATMENT OF CHOLELITHIASIS.*

BY DAVID BARROW, M. D.

In considering the surgical treatment of gall stones it is necessary to bear in mind the anatomical structures involved in the operation. The healthy gall-bladder can rarely be mapped out through the abdominal parieties, and the fact of being able to do so is strong evidence of some pathological condition. The ducts in their relation to each other, and the common duct in its relation to the vessels in the gastro-hepatic omentum, must always be clearly pictured in the operator's mind, and the overlapping of the ducts by the portal vein must be remembered when it becomes necessary to incise the duct to remove a stone, an incision in the upper two thirds of the cystic and the middle third of the common duct being the safest. The acute angle made in the cystic duct makes it almost impossible to pass a probe from the gall-bladder into the common duct, and failure to do so after opening the gall-bladder does not necessarily mean some obstruction. The three or four lymphatic glands found in the lesser omentum in the presence of inflammation are often enlarged and indurated, and may easily deceive the surgeon into believing that he has impacted stones in the duct to deal with. The peritoneal reflections of the gall-bladder, the gastro-

* Read before the Kentucky State Medical Society, Paducah, Ky., May 7-9, 1902.

hepatic omentum, and duodenal reflection must be understood, for during the operation it may be necessary to divide one or more of these folds. When the stone is impacted in the common duct, to bring it nearer the surface may require division of the peritoneum, binding down the duodenum, after which, with the finger in the foramen of Winslow, the gastro-hepatic omentum being brought forward, the operation can more readily be done.

The blood-vessels supplying the gall-bladder and ducts are enlarged in the presence of inflammation, and incision of either is often attended with troublesome hemorrhage. Richardson mentions a case where death occurred nine days after the operation from secondary hemorrhage from the cystic artery.

The large peritoneal pouch found in this region is a wise provision of nature, and renders operations upon the gall-bladder and ducts less hazardous. Into this pouch fluid will gravitate, and the end of a glass tube placed at the most dependent point will give satisfactory drainage; also will any escaping infectious material be confined and the inflammation resulting be limited, or if preferred a lumbar incision can be made for the purpose of drainage. This pouch will hold a pint of fluid before overflowing into the general cavity over the pelvic brim or through the foramen of Winslow. However, in most of the operations in this region the normal anatomical relations are destroyed, and we will not have the normal landmarks to guide us. From an infectious inflammation involving the gall-bladder and ducts the surrounding structures become involved, and on incising the parieties we find everything matted and unrecognizable, requiring extensive manipulation and dissection to remove the stones. The gall-bladder may be contracted—not larger than a filbert—with thick walls, or the ducts may be dilated, making the operation difficult and dangerous. When the inflammation is extensive it is not unusual to find adhesions involving the gastro-hepatic omentum, duodenum, the pylorus, colon, kidney, in fact, nearly all the structures above the pelvic brim on the right side. With these conditions, it may be extremely difficult to even find the gall-bladder or trace the ducts that the stones may be removed. Gall stones offend in a mechanical way and by producing infection of the bile passages, and in these operations special care must be taken to protect the surrounding healthy structure and in preventing the spread of the infection. Occasionally, in old cases, we find abscesses in the surrounding structures due to the extension of the infection from within

the gall-bladder. To further add to the difficulty in these operations the patients are usually fleshy, with thick abdominal walls.

The indications for operation are numerous, and usually symptoms sufficient to diagnose the case as one of gall stones will cause trouble enough to require operation. I do not mean that every case of gall stones should be operated upon, for many of them cause no trouble, but when symptoms are present the safest treatment will be the surgical. Repeated colics, continuous pain, indigestion, septic absorption, as manifested by chilliness, fever, loss of weight, etc., intestinal obstruction, partial or complete jaundice, when traceable to gall stones, demand prompt surgical interference. The absence of jaundice must influence us but little, for its presence is exceptional, but when present makes the operation more urgent, although cholemia affects unfavorably the prognosis. All of us know that the symptoms produced by gall stones are at times not readily traceable, and the possibility of gall stones being responsible for obscure abdominal symptoms should ever be in the physician's mind. A prompt operation in these cases means nearly always a safe termination, for an uncomplicated operation for gall stones is one of the safest done in the abdominal cavity. It is a mistake to suppose that gall stones, if let alone—and any treatment other than surgical and palliative is of doubtful benefit—are not dangerous to life; that they are simply attended with much pain and discomfort, but with little danger. It is true that nature can do much, but then she often fails, and unless an operation is done death must ensue. A ruptured gall-bladder, an extensive peritonitis, an intestinal obstruction, are not such rare conditions to find dependent upon gall stones.

One condition occasionally met with is acute (phlegmonous) infection of the gall-bladder, which is often impossible to diagnose and yet extremely hazardous, and unless early operation be done will terminate fatally. It much resembles acute appendicitis, and can not be differentiated until the incision is made. The gall-bladder may be found gangrenous and perforated, with rapid-extending septic peritonitis which can only be arrested by quick and thorough operation. Operation in these cases is as urgent as in acute appendicitis, and the condition is equally as serious. I have seen three cases of this kind, two dying before surgical treatment could be instituted, the other being saved by prompt operation. Perforation had occurred in all of them, and the septic bile had produced extensive peritonitis, as was shown by the autopsies and the operation. Bile in the urine will be present

early in these cases, before there is any tinging of the conjunctivæ, and by examining the urine frequently valuable diagnostic information may be obtained, the microscope, by detecting bile-stained masses, giving earlier information than the chemical test.

Surgical treatment should be resorted to where, first, the colics are frequent or the suffering is severe and of several days' duration; second, when there is evidence of cystic or common duct obstruction not positively due to malignant disease; third, in some cases of positive malignancy, with the hope of lessening pain and discomfort and to remove the stones frequently present in these cases, or to do cholecystenterostomy for the relief of cholemia; fourth, in acute infection of the gall-passages, cholecystitis, and cholangitis; fifth, in chronic infection of the gall-passages, as manifested by irregular chilliness and evening temperature, with loss of flesh, weakness, and partial invalidism, with previous history of indigestion and colic; sixth, in a chronically distended gall-bladder large enough to be felt through the abdominal parieties; seventh, in intestinal obstruction due to gall stones in the intestine, or to inflammation caused by gall stones; eighth, in some obscure inflammation pointing to trouble in the upper right side of the abdominal cavity we are justified in resorting to exploratory incision.

The results following operation upon the bile-passages are most satisfactory. The termination of the case depends upon the time of the operation and the complications found. If the operation is done early there will be few complications, and the patients almost invariably get well; when delayed, complications are frequent and fatalities not unusual. Much also depends upon the existence or non-existence of infection, the character of the infection, etc. True it is that normal bile is practically aseptic, but sooner or later gall stones will produce infection, and in most of the cases operated upon we must remember that we are dealing with septic bile-passages, and guard against extension of the inflammation. The common colon bacillus, the streptococcus, staphylococcus, and the typhoid bacillus are frequently found in the bile-passages, the first being the most frequent.

In acute infective cholecystitis and cholangitis the danger is great, and no matter how carefully the operation may be conducted a considerable mortality will persist. These cases may become suppurative, from which we have abscesses in the liver, peritonitis, purulent collections in surrounding tissues, and numerous other complications, so in early operation is our best hope to reduce the present mortality. In

the operation, should it be necessary to incise the common duct, the danger will be greater than if the manipulation be confined to the gall-bladder. With cholemia the prognosis is not good; not only is there danger of uncontrollable hemorrhage, but the operation usually involves the duct, which adds to the danger by prolonging it, and by making extensive manipulation necessary to remove the stones. In these cases we often have malignant disease, usually the head of the pancreas, with the stones, a condition making the prognosis grave even for temporary recovery. All of my fatal cases of gall-bladder surgery have been of this kind; where with the stones there has been malignant disease or marked cholemia. In only one case was death caused directly by hemorrhage, the other three living for some days after operation and dying of exhaustion. In the fatal case from hemorrhage I found no stone, but malignant disease of the pancreas, and little manipulation was done, the bleeding being uncontrollable and continuing until the patient's death, forty-eight hours after the operation.

In cholemia Osler's coagulation test of the blood should be resorted to, and the operation so timed as to add greatly to its safety. Chloride of calcium in twenty-grain doses is advised to be given several days preceding the operation, and should be tried when there is marked cholemia.

With drainage, if the bladder and ducts are freed of stones, recurrence is rare, but occasionally the stones re-form and the distressing symptoms return. If the second operation is done the gall-bladder should be removed when possible, for with the tendency to recur only temporary good might follow.

The following case has given me much anxiety, and I have advised that cholecystectomy be done: Mrs. H., age forty, was a great sufferer from gall stones for a number of years. Colics were of daily occurrence; she had been jaundiced several times, and had acquired the morphine habit. Her weight was two hundred pounds, although a short woman, and the abdominal wall was quite thick. At St. Joseph's Hospital I did a cholecystotomy, removing nearly two hundred stones. The operation was without special incident; the rubber drainage-tube was kept in for two weeks, after its removal the fistula closing in ten days. This patient left the hospital four weeks after the operation everything healed and feeling well, having gotten entirely rid of the morphine. Six months after I was called to see her for an early abortion, finding her quite weak from the loss of blood. A month after the

abortion she began to have colics similar to those she had before the operation, and has continued to suffer more or less pain ever since. The pains now are frequent and severe, and she is again taking frequent hypodermics of morphine. I believe the stones have re-formed, and to relieve her another operation ought to be done, a cholecystectomy if possible.

Another patient had several characteristic colics some months after a cholecystotomy, with removal of seven faceted stones; the last colic, being followed by jaundice, was relieved by the passage of a small non-faceted stone; patient has remained well since, now about two years.

Recurrences are exceptional, however, and we expect the patients to recover promptly and permanently, and are justified in giving every assurance that relief will follow operation. In only a very small per cent of the cases operated upon do we have the stones to re-form.

Occasionally, after cholecystotomy, the fistula will not close, leaving the patient a sufferer from the discharge of mucus or bile. This is always annoying, and occasionally causes great suffering by irritating and inflaming the skin. When the passages are freed of stones and there is no obstruction to the flow of bile to the duodenum, and the gall-bladder is properly sutured to the abdominal wall, there is little danger of a permanent fistula. In about ten per cent of cholecystotomies the fistula exists. Mayo Robson had fourteen fistulas out of one hundred and eighty-nine cholecystotomies, nine of them being cured by subsequent operations.

A permanent fistula usually means obstruction to the cystic or common duct; in the absence of malignant disease, a stone probably that has been overlooked at the operation. It is impossible, in some cases, to be certain that the ducts are free and that there is no hindrance to the flow of bile into the duodenum. A mistake sometimes responsible for fistula is the stitching of the gall-bladder to the skin, as was advised by Tait, and not to the aponeurosis, the proper way.

The mortality in uncomplicated cholecystotomies for cholelithiasis is almost *nil*, probably not more than one or two per cent. Of Robson's one hundred and ninety-six cholecystotomies eleven died, "five the subjects of cancer and four of infective cholangitis and jaundice," the two simple cases being in old men, one with a heart lesion and the other developing cerebral symptoms some days after operation.

When the stones are in the common duct the mortality, of course, is greater. Courvoisier states that in four per cent of all cases of chole-

lithiasis stones are found in the common duct. Robson believes the per cent greater, it being over 13 per cent in his own cases. The mortality after choledochotomy is about 20 per cent; in Kehr's cases, 6.6 per cent; in Fenger's, 14.3 per cent; in Robson's, 23.8 per cent; and in Murphy's, 40 per cent.

A comparison of results in cases treated medically and surgically is almost impossible. The medical ones nearly always recover, for they are turned over to the surgeon when death is about to ensue just in time to give the surgeon credit, unjustly, for the fatal termination. If all patients with cholelithiasis were treated medically, and none of them subjected to operation, the mortality would certainly be far greater than at present. On the other hand, if all the patients were operated upon in a well-equipped hospital by a competent surgeon as soon as the diagnosis could be made the results would be brilliant, and rarely indeed would a death be recorded. However, we must treat these cases, and it is exceptional when this can be done in an ideal way. When the surgeon is consulted, as a rule medical treatment has been tried and has failed; there are usually complications present, and the time has gone by when an operation could have been done without danger. But remember, to obtain the best results we must operate early, at a time when we can tell those interested that recovery will almost surely follow.

The success of operation for the relief of gall stones will depend upon the location of the stones, the condition of the biliary passages, and the complications found. With the usual incision manipulation is rather more difficult than through the median incision below the umbilicus, or through the incision for appendicitis, as the abdominal wall is rigid and less yielding on account of the proximity of the incision to the costal arch. The vertical incision I almost invariably make two and a half to three inches long and to the outer edge of the right rectus muscle, but the oblique or Kocher is advocated by some, and will often give better access to the duct when necessary to do choledochotomy. Either incision may be extended at any angle, and must often be quite free, that the stones may be gotten at and removed. By placing a sandbag under the patient (liver level) the duct will be brought nearer the surface and we will be aided greatly in the manipulation. The operative technique in this region is the same as in other regions of the abdominal cavity, being varied slightly by the

anatomical structures there found and the extent and character of the inflammation caused by the stones.

In all abdominal operations with an infected area I advocate careful and extensive gauze packing; surround the infected structures, push aside the healthy ones with gauze towels, and extensive manipulation may be done with safety, and if infected material escapes the gauze will prevent its doing harm. The same precautions should be taken in all gall-stone operations as in cases of acute appendicitis. When the gauze is properly placed I am master of the situation, and do not hesitate to break up extensive adhesions and do all manipulation necessary to get at the stones or diseased structures and remove them.

Cholecystotomy is the most frequent operation done for gall stones, and is one of the easiest and safest done in the peritoneal cavity. After incising the parieties the gall-bladder and ducts are carefully examined by introducing one or two fingers, and if stones are detected after placing the gauze so as to catch any escaping fluid the bladder is incised (some advise aspirating before making the incision) and the stones removed. The gauze being removed and the region carefully cleansed, the incision in the gall-bladder is stitched to the aponeurosis, leaving a rubber drainage-tube in the gall-bladder. I prefer closing the incision in the abdominal wall with tier sutures when there is no reason to hurry, leaving just room for the drainage-tube. If necessary to complete the operation quickly, *en mass* sutures of silkworm gut answer the purpose well. I usually use No. 1 chromicized catgut to fasten the gall-bladder to the aponeurosis. The drainage-tube is removed usually in ten or twelve days, depending upon the condition of the gall-bladder, when the fistula will gradually close. When the mucous membrane of the bladder is much inflamed it is well to irrigate daily with sterilized water; if in a fairly healthy condition no irrigation is necessary.

In cases of cholelithiasis of long standing we often find the gall-bladder much contracted—so small that it is impossible to fasten it to the abdominal incision. In these cases it may be well to do cholecystectomy, but when this is not advisable we can fasten a rubber tube in the bladder with a stitch, and by placing gauze properly feel pretty safe that there will be proper drainage, that the peritoneal cavity will be protected, and that the patient will progress satisfactorily. Again, in some cases we will be able to fix the bladder to the peritoneum by

separating the peritoneum for an inch or more around the abdominal incision, making a funnel-shaped cavity, after the incision in the gall-bladder and peritoneum are united.

The so-called ideal operation suggested by Langenbach, suturing the incision in the gall-bladder and returning it to the cavity without drainage, should rarely be done. There is greater danger than in the usual cholecystotomy, and it is exceptional to find a condition justifying this procedure. Block suggests doing the operation in two stages—cutting through the abdominal wall until the peritoneum is reached and then packing with gauze, waiting for adhesions to form before opening the gall-bladder. This will be indicated only as suggested by Robson, in cases where there is cholemia, the hemorrhage being more easily controlled than in the usual cholecystotomy. There are many apparent objections to this operation, and only in some of the cholemic cases should it be resorted to.

When the stone is in the cystic or common duct we sometimes succeed in crushing (cholelithotrixy) or pushing it back into the gall-bladder. When this can not be done the duct must be incised (choledochotomy). This may be quite difficult, and often requires much patient and persistent work. After the stones are removed it matters but little whether the duct be sutured; if it can be readily done it is best to suture, but where there is much trouble, as is usually the case, we can leave the incision unclosed, feeling safe if a drainage-tube and gauze are properly placed. If the patient's condition is extreme we may be unable to relieve the obstruction, and under such circumstances an anastomosis may be made between the gall-bladder and the intestine (cholecystenterostomy), or between the dilated duct and the intestine (choledochenterostomy).

McBurney advises incising the duodenum and dilating the duct when the stone is impacted in its duodenal end (duodeno-choledochotomy). In his six cases he lost one, and this one died of prolonged vomiting from an irritable stomach.

Cholecystectomy is often indicated, and is being more frequently done by some operators. After separating the bladder from the liver the peritoneum of the cystic duct is incised circularly and the duct pulled out and ligated with catgut. When the gall-bladder is much diseased and the ducts are free of obstruction this seems to be the best operation.

THE MEDICAL MANAGEMENT OF APPENDICITIS.*

BY J. W. IRWIN, M. D.

The management of appendicitis requires on the part of the medical attendant an accurate knowledge of the anatomy of the appendix vermiformis ceci and the cecum itself. Special attention should be paid to the small opening from the cecum into the appendix which is sometimes partly closed by a fold of the mucous membrane known as Gerlach's valve. There is no anatomical difference in the structure of the appendix and the cecum except perhaps a greater number of glands in the former.

The appendix is made up of four coats, usually a single artery, a vein, nerves, and lymphatics, and it is three or four inches in length and about the size of a pipe-stem. Its uses in man are not clear, and it is sometimes absent. Darwin, in his work on "The Descent of Man," refers to it as the useless rudiment of the cecum. Its absence in the orang-outang and wombat has left a hiatus between monkey and man in the story of evolution.

Haeckel refers to the appendix in his work on "The Evolution of Man" as a "rudimentary organ" which, in our plant-eating ancestors, was larger and of physiological value.

The cecum in man is about two and one half inches in length, but in some of the lower animals it is several feet in length. An instance of its great size will be found in the marsupial kaola. This little animal is about two feet in length, and its cecum is upward of six feet long.

Before Reginald Fitz, of Boston, in 1886, called attention to appendicular disease and advised for its cure the early removal of the appendix, disorders in and about the caput coli were generally diagnosed and treated as typhlitis and perityphlitis, but since his observations were published and those of McBurney, which appeared five years later, abdominal surgeons have sprung into existence everywhere and with great rapidity to meet and contend with the ravages of a disorder which is not new and not very fatal. Typhlitis and perityphlitis are lost sight of.

It may be said that many people are alarmed by reason of the numerous hospital and private reports of appendicular diseases which

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appear in the newspapers; everything in the form of colic causes a fear akin to madness that the dread disease has seized them. The surgeon, in such cases, though he be a mere tyro, finds willing subjects when he offers with an easy facility to open the abdomen and make the cure. If the patient survives the operation it was timely and a great success, but should a fatal result follow we hear of the successful operation, and at any rate that the surgeon was summoned too late. Surgeons are never summoned to a case too early, although some advocate early and others late operations in appendicular diseases, as the character of the affection appears to them. The family physician or general practitioner responds to a case uncomplainingly at any time, no matter what stage the disease has reached. It is a well-known fact that the mortality of appendicitis when treated medically does not exceed ten per cent, while surgical treatment shows a far greater death-rate.

In the treatment of appendicular diseases the surgeon and physician should come to a happy medium, as extremes in any direction are usually wrong procedures. Every case should be studied and treated on its merits according to the best information afforded. Fulminant cases are not good ones to treat from either the surgical or medical point of view, no matter how early the diagnosis is made out, for serious involvement of important tissue often precedes the leading symptoms of the disease. At the outset of the attack pain is not always localized in the right lower quarter of the abdomen, and although it may later center there, at or near McBurney's point, in four fifths of the cases, in the other fifth it will be more intense elsewhere. The symptoms, complex in all cases, must be considered before reaching a conclusion sufficiently accurate to justify an exploratory incision even in the fulminant or the most severe form of the disease.

Every grade of inflammation of the appendix vermiformis cecum, from the mildest catarrhal affection of its mucous lining to the most severe phlegmonous disorder of all its coats, resulting in gangrene and perforation, may be met with. The attack may come on suddenly and the suffering may be intense from the beginning; even signs of fast approaching dissolution may be present, or the symptoms may at first be mild and several days may elapse before enough evidence of the disease is established to justify the diagnosis. The differential diagnosis from typhlitis and perityphlitis should not be lost sight of, and this is of especial interest in the absence of a tumor in the

appendicular region. Impaction of the colon and cecum is suggestive. When it is remembered that inflammation of the cecum may extend to the appendix by continuity of surface the early diagnosis of cecitis is important.

When it is reasonably apparent that the patient is suffering from appendicitis, as indicated by pain in the lower right quarter of the abdomen, with or without a tumor or fever and contraction of the rectus abdominis muscle, he should be put to bed and the importance of rest should be made clear to him. The bowels should be thoroughly emptied by the use of a large dose of castor oil, and if necessary colon enemata should be administered. All gases and offending substances should be removed.

Diet is of great importance. At first it should consist of nothing more than strained soups, consomme, or bouillon. If milk is given it should be first peptonized. Later food that digests readily in the stomach may be given. All articles of diet that tend to increase fermentation should be avoided.

Pain should be relieved by the application of ice poultices or the hot water bag, as may prove to be the most agreeable to the patient. In no event should opium or its derivatives be employed until other means have failed to afford relief. The bowels should be kept free from gas by the use of enemata, or if need be laxatives, such as castor oil. Magnesia or cascara may be used. An occasional laxative dose of calomel will do no harm.

It should be remembered that appendicitis, like all other inflammations, tends to resolution by the *vis medicatrix naturæ*, and if we can aid the efforts of nature the result will be satisfactory in nearly every case. Should local applications fail to relieve the pain, antipyrine or phenacetine should be given. The slight fever which is usually present will also be relieved by the use of these remedies. One-fourth or half grain doses of calomel should be given every third hour. As the fever, pain, and swelling subsides the calomel may be discontinued and some preparation of iodine may be given. The syrup of hydriodic acid in drachm doses may be given every four hours, or the iodide of potash in ten to thirty grain doses every fourth hour may be given.

Later in the course of convalescence syrup of the iodide of iron may be indicated. In several instances I have obtained good results from

the use of salol or salicylate of soda. Salol is given in divided doses to the extent of one drachm a day, or salicylate of soda four drachms daily for the first day or two. The patient should be kept in bed and at rest until all symptoms of pain and tumor, if one should be detected, have disappeared. The steady use of alteratives for several weeks after the patient is well enough to resume his former habits will tend to prevent relapses.

In the fulminant form of appendicitis surgery resorted to early would appear to offer the best results. When abscesses form at any stage of the disease they should be evacuated, but it should also be remembered that when abscesses form within the appendix there is a likelihood of them rupturing and emptying into the cecum, as the mucous lining of the appendix is less resistant than its cellular and muscular coats.

In the recurring form of appendicitis the best time for operation would be between the attacks. It should also be remembered that it is often hard to differentiate between the various forms of appendicitis, and on this account many cases have been subjected to surgical treatment that would no doubt have gotten well without it.

During the last twenty-nine years I have seen and treated upward of one hundred and fifty primary cases of what was then known as perityphlitis, later and now, appendicitis, without having to resort to surgical means, and have had to record but two relapses, both patients surviving, and a single death. Death came in the one case near the end of the second week of the disease in a gentleman forty-six years of age, who was also the subject of heart trouble, the result of years of dissipation. I believe that overeating, fatigue, and catarrhal causes conduce to appendicitis in the great majority of cases.

LOUISVILLE.

TREATMENT OF FRACTURES AND DISLOCATIONS IN RELATION TO SUITS FOR MALPRACTICE.*

BY JOHN A. LEWIS, M. D.

I claim nothing for the paper, but I do claim much for the subject, and I ask for it at your hands that earnest and thoughtful consideration which its importance demands. It interests each of you equally, whether you be an humble practitioner of medicine, unostentatiously performing your arduous labors in some remote and unknown village or in the more quiet country, or whether you be some surgeon of world-wide fame of the crowded metropolis, who numbers among his patients the rich and the elite. It touches each alike in two most vital points, the reputation and the pocket. It is true that that most remarkable man of any age, who wrote so lucidly of the hidden motives of the human heart, said that "he who steals my purse steals trash." Nevertheless I am sure the purse holds no mean place in the esteem of mankind, and he who steals it thrusts his stiletto hard by the medulla of human happiness.

A suit for malpractice may follow the treatment of any ill to which the human flesh is heir in any of the various departments of the practice of medicine, and yet I believe it will be conceded that the majority of these damage suits fall to the lot of the surgeon, and most of them the result of either real or imaginary deformities which occur in connection with the treatment of fractures and dislocations. For this reason I have selected the limited field of treatment of these injuries as typical of the entire subject of suits for malpractice, rather than the discussion of the entire field from the standpoint of the general practitioner, which would manifestly be too extensive for the limited time of this occasion.

I am sure no one will question the accuracy of the statement when I assert that this is an age of damage suits; indeed, it seems to be the prevailing fad. There was a time in the dim past—the good old days of our fathers and of the stage coach—when a suit for damages for any cause was a thing almost unheard of, and the man who brought one was laid under suspicion as being actuated by motives other than the highest. In those days men took their lives in their hands, assumed their own personal risks, and went forth like knights to take their

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chances in the rough battle of life. But not so now. The modern gladiator who steps boldly into the arena of life, especially if the battle be extra hazardous, is nerved to the combat with the reflection that he will hold some one for pecuniary damages for any black eyes or broken bones which may fall to his lot in the encounter. The passenger on the railway train who receives the slightest injury in being transported from one point to another is sure to institute suit against the railway company so soon as he recovers his breath sufficiently to call a lawyer through a telephone. The employes on the railway, in the mine, in the foundry, in the factory, indeed employes in any capacity whatever have ever present with them the hope of reimbursement for any injury they may sustain in any of their various pursuits. Even the "little coon" who drives the village doctor in his morning rounds (necessarily exposed to contagion) has high hopes for damages in case he breaks out with the measles, complicated with an attack of otitis media, while following his calling with the full consent of his family. But above all the doctor, the custodian of life and limb, comes in for a double share of trouble along these lines. He is held to the strictest account of responsibility for sins of omission and commission. If his most delicate and difficult task is not performed to the entire satisfaction of not only the patient and his family but of the entire neighborhood, he is very promptly subjected to a suit for malpractice. It seems strange, and to say the least of it hard, that the men who above all others live lives of self-sacrifice, giving their time, their talent, even their lives, ministering to the sick and the suffering of their respective communities, who freely give their services to the poor day and night without money and without price, should be ever held under suspicion and the strictest surveillance, and for the least failure, real or imaginary, are liable to be set upon by the harpies of the law.

It is a well-known fact that the charity patient (and the man who though not an object of charity never pays nor expects to pay a bill for medical services) is the man who more frequently than any other seeks redress at the hands of the law for unsuccessful treatment by the surgeon. This is one of the many ways which the "dead beat" adopts to escape the payment of a medical bill; by bringing suit he hopes to effect either a compromise or to offset your bill by a contra one. It would be well for every physician to remember that the law holds him to the same strict responsibility in the treatment of the charity patient that it does in the treatment of the well-to-do. We must guard ourselves

well when dealing with this class of patients. In my estimation ingratitude is the basest of all crimes.

I know of but three classes of persons who go to their daily vocations unnerved by the hope of reimbursement in case anything should befall them while engaged in their own chosen field of labor. The first is the aeronaut, who performs his hazardous feats in mid-air on his trapeze bar hanging from the tail of his balloon; the second the preacher, who breaks through the floor of his baptistry, nearly drowning himself, while making a sledge-hammer argument in his vain endeavor to arouse his sleeping congregation; the third the noble-hearted and generous physician, who nearly or quite meets his death from septicemia resulting from an infected wound received while exploring a foul abscess in a charity patient. No damages for the last individual; the two first are consulting a lawyer, who thinks that they have a case.

I have been racking my brain for a solution of this disposition on the part of the human family, who, we are told, have been "made in the image of their Creator," to hold some one responsible for their misfortunes and accidents, oftentimes the result of their own gross carelessness and negligence. In my opinion, the money-devil has full possession of the majority of the human family and is at the bottom of the whole matter. Money is the thing they most need, money is the thing they most desire, and money is the thing they are going to get, rightfully or wrongfully. They would sell their immortal souls for money if they could find a buyer, and if this sale could be effected and the stringency in money matters thereby made easy many a suit for damages would be avoided. I honestly believe there are some people in this world so in love with filthy lucre that they would be willing to sacrifice an arm, a leg, an eye—anything about the corporeal outfit which they could conveniently spare—for a reasonable amount of money. So whenever they get an injury, and the surgeon fails in any particular to put up a better job than the original one, they seize upon the flaw, real or imaginary, as a cause for legal action.

There is another cause for these suits of which I must speak; I do it with the blush of shame on my cheek; it is jealousy—jealousy between brother physicians—physicians, who above all others should be true to one another. "Tell it not in Gath, sound it not in Askelon," that one physician should be the instigator of a suit for malpractice against a brother physician. By some of the mutations of time a case which one

physician has treated for a fracture, or a dislocation, or other injury comes under the observation of a brother physician; by inuendo, or by unfavorable comment upon the result by some faint praise, he damns his brother. The suggestion has been made; this is all that is necessary; the injured party loses no time in consulting the devil's running-mate, a briefless, one-half-for-the-other lawyer. They get up a case with the distinct understanding between lawyer and client that they are to share alike in the here and (it is to be hoped) in the hereafter, "the Lord be praised." A lawyer has been found to prosecute the case against the surgeon, and who would believe it? occasionally a surgeon is found who is willing to be a pliant witness in the hands of the lawyer. We have presented this pitiable picture—a lawyer for the prosecution, a doctor for the prosecution; a lawyer for the defense, and a doctor for the defense. Where is the doctor for the truth? Truly the "ox knoweth his owner and the ass his master's crib." *O tempora! o mores!* "May my tongue cleave to the roof of my mouth, and my right hand forget its cunning" in the hour when I shall appear as anybody's witness save the truth's.

Don't understand me to say that there are no just suits for malpractice against physicians or surgeons. Far from it. Criminal ignorance, neglect, unfaithfulness, in consequence of which the usefulness or happiness and comfort of a human being is destroyed, should not go unpunished. Neither would I have you believe that the majority of our patients are not only ready but anxious to find some flaw in the treatment of their cases which would justify them in bringing suit for damages. On the contrary, I gladly and cheerfully bear testimony to the generosity, the nobility, and the appreciativeness of the majority of those who call upon our profession for treatment for their many ills. But without question there are those, and they are not a few, who are glad of an opportunity to hold the physician responsible for some real or imaginary defect in treatment. They seem entirely oblivious to the difficulties confronting the surgeon, and do not recognize the fact that failure is not impossible in any case, and that no surgeon can positively guarantee perfect results, even in uncomplicated cases. The public sadly needs education along this line. They ought to be made to understand how serious and how difficult and delicate a matter it is to treat even a simple fracture or dislocation, and how much more difficult to treat a serious and complicated one; how hard it is to make out the exact anatomical relation and position in a bruised, swollen, and dis-

torted limb, whether the injury is a dislocation or a fracture, or both, and how difficult it is to return the limb accurately to its normal position, and how hard to maintain in position after the injury has been adjusted. They ought to understand that a surgeon is mortal, and like other men fallible. The wonder is, when we contemplate the difficult surroundings, that failure does not occur oftener than it does.

I aver that there are cases of simple fracture (notably oblique ones of some of the long bones) in which failure may follow treatment although the surgeon may have done everything which skill and faithful attention dictates. He may have recognized perfectly the form of injury, may have reduced and perfectly adjusted the fragments and skillfully supported the limb by properly applied splints, carefully and faithfully watched the injury through the entire course, and yet upon that supreme day—that day of suspense to the surgeon, when dressings are removed—he may find the result is not what it ought to have been, and not what he expected. And yet the surgeon should not be held responsible for the failure unless a man should be held responsible for an impossibility. I know this is putting the matter strongly; follow me while I give you my reasons therefor.

Remember, if you please, how hard it is to maintain an oblique fracture in position after it has been accurately adjusted and supported after the most approved manner. We frequently have violent and sudden muscular contraction, nearly jerking the patient out of the bed. This often occurs while the patient is asleep. Attendants are required to sit by him constantly to control this as far as possible. It is a well-established fact that fractures of bones have occurred from muscular contraction alone. The patient must be moved; he can not lay in one position through his entire treatment; he must be turned for purposes of cleanliness and nature. Any movement may excite muscular contraction—may displace these oblique fractures after they have been perfectly reduced and splinted. Remember, we are dealing with flesh and blood, and not with a buggy shaft or a wooden leg; if with either of these, then any tyro could so bind them up so as to warrant results; but we are dealing with a human limb, composed of flesh and blood and nerve and tendon. The supports and bandages must be just firm enough to hold and yet not to interfere by pressure with circulation or nerve; the limb may swell or it may shrink under pressure. No human tact can meet all these delicate indications in every instance. It is beyond human skill and ingenuity; no man is infallible. He may do

all in his power, all that skill dictates, and yet be disappointed. It may have been rightly adjusted, rightly and skillfully treated, and still have gone wrong underneath the dressing.

One other matter I mention which the patient and his family should remember in making up their estimate of the surgeon's responsibility in the treatment of these cases; the surgeon is not in the case of his own bidding. He has been selected by the patient or his family for his already known ability or after inquiry and investigation. Those employing him know his caliber, whether he has any special ability or adaptation to the treatment of these injuries or not; they had their beck and call—every surgeon from New York to San Francisco. Why did they not secure the very best surgical talent in the land rather than that which they employed? It was simply a matter of money and convenience; they could have paid their money and taken their choice. But they were willing to assume the risk and trust the case to a mediocre surgeon rather than undergo the outlay of money. They take the risk, failure follows, and who is to blame? Certainly not the surgeon, unless gross neglect and carelessness can be proved. The truth is the patient assumed the risk and failure followed; he should blame no one but himself. The patient and the family should be made to feel in the employment of the surgeon that they act voluntarily, with their eyes open, and must assume the risk.

But to return from the digression. In consideration of the many difficulties which environ the surgeon in his difficult and responsible task, that of treating fractures and dislocations, and the possibility of a suit for malpractice in consequence of unsuccessful results, what shall we do, and how shall we proceed to protect ourselves? In the first place, no man who has not some special skill and training in this direction should ever undertake the treatment and care of this class of cases. If, however, you undertake to treat these injuries, then make up your mind to give those who fall into your hands your most skillful and painstaking and constant attention from start to finish.

In my judgment, the time to make a complete and thorough examination of your patient is upon your first visit, at the time of the accident. In the majority of cases the conditions are better for making an accurate diagnosis, and your opportunity more favorable for reposition and adjustment of the injury than than ever afterward. On your first visit you will find your patient willing and anxious to take an anesthetic while undergoing an examination; in a few days it may not be so.

The muscles are more relaxed, there is less effusion, less induration, less fixedness at the time of injury than ever again. After you have examined the patient and made your diagnosis it is all-important that you should be perfectly frank and free with the family; tell them the exact nature of the injury, and just what they may expect. Hold back nothing, don't be over-confident of results; guard your prognosis well. If possible, have some honest practitioner, or better still some intelligent and respectable layman present to hear your statement when made, and be sure you state the facts so plainly and so strongly as to impress the situation upon their minds. If you are uncertain about the form of the injury, or about the proper method of treatment, call at once for a consulting physician, and tell the family you are unwilling to assume the entire responsibility. In selecting your method of treatment use only the approved. Make no experiments; the courts have held that a physician is liable for damages in case injury comes to the patient from the use of some new and untried method, although the object and effort was to do good.

Before concluding this paper I have thought it might be useful and helpful to review very briefly the methods of examination and treatment of some of the fractures and dislocations which are most frequently met, and the treatment of which are most frequently followed by unsatisfactory results, with the view of guarding ourselves against failure in so far as may be possible.

Perhaps the most common fracture to which the human body is liable is that of the forearm, generally the radius. The fact that the hand and arm are ever on guard, standing between us and a thousand dangers, will account for the frequency. The fracture of the lower extremity of the radius is the form of fracture most frequently followed by imperfect results and consequently the most liable to bring trouble. The injury is known as Colles' fracture, and is easily recognized by its resemblance to the silver fork. It may occur at any age, but occurs most frequently in advanced life. Deformity frequently follows the treatment of this fracture, especially in the aged. The deformity generally consists in an anterior prominence of the lower end of the radius, coupled with anterior and lateral displacement of the ulna, stiffened fingers and wrist, with limited use of the hand.

In my opinion, the reason we are liable to have deformity in this particular fracture is the fact that we rarely get a perfect reduction of the fractured end of the radius. The fracture may be an impacted one,

the fragments may be small and so wedged in between the carpal bones and the lower end of radius as to render replacement difficult; besides, the lateral ligaments and structures which bind the ulna to radius are so torn and divulsed that they never again hold the ulna and radius in close apposition.

Another reason why a more accurate adjustment of this fracture is not secured may arise from the fact that an anesthetic is rarely given in adjusting the injury. This comes from the fact that it is hardly thought necessary, the seeming replacement only requiring a moment; besides, many of the patients being old we shrink from administering an anesthetic. The proper reduction often requires considerable direct force and pressure, and we fall short of this when the patient cries out with pain. To secure satisfactory results perfect reposition of the fragments before applying splints is imperative.

The deformity and swelling of the fingers and hands occurs in the aged, and is the result of protracted confinement in splints, coupled with the enfeeblement of the circulation. This must be avoided by allowing splints to extend only to the fingers, leaving them unconfined, and by keeping up motion in them just as far as possible from the day of injury until the splints are removed.

Next to the wrist perhaps injuries at the elbow are most liable to give trouble; a mistake in diagnosis and treatment may result in imperfect and unsatisfactory results. This joint has entering into it several bones, processes, and ligaments, which make it very complex. We may have a dislocation of the joint, a fracture of the condyles, fracture of lower end of the humerus, fracture of the olecranon, or fracture or dislocation of the head of the radius. Great care must be exercised or we will make an error in diagnosis, which oversight will lead to grave results.

In your examination under an anesthetic locate your bony prominences, the condyles, the olecranon, its fossa, the head of the radius. By careful manipulation see that the joint flexes and extends, and that the head of the radius is in place. If you have a fracture, crepitus will indicate it; if dislocation, reduction lessens the deformity and the joint will play. Dress all injuries at the joint, except fracture of the olecranon, with elbow flexed. Whether fracture or dislocation, you may certainly predict immobility and limited flexion of joint for some months, but wonderful resumption of natural function follows prolonged use in these elbow injuries. In the shoulder injuries we must

again be very careful to make a clear diagnosis. Fracture and dislocation must be differentiated. Locate carefully your bony landmarks; these must be your guides. The acromion, the coracoid processes, and the head of the humerus, all in proper relation, make up this joint. Any deviation must be taken into account.

Fracture of the long bones are all easy of diagnosis but not always easy to keep in place after reduction, especially in oblique fractures. When a fracture of any of the long bones is first inspected after the splints are removed, frequently there will be considerable seeming deformity at the point of fracture; this is especially so in fracture of the shaft of the femur. Much of this deformity is more apparent than real. The large amount of provisional callous always thrown out around the point of injury, connected with the fact that the limb is very much reduced in flesh from pressure and disuse (nothing but skin and bone is left), will account for this. Time, and flesh on the shaft of the bone, will help the appearance wonderfully. Several times in my life I have been scared out of my wits at the first look after dressings have been removed.

Injuries at the hip joint are always serious and sometimes obscure. Serious oversights and mistakes are readily made in this region. The difficulty lies in the differential diagnosis between the different varieties of dislocations and diagnosis between fracture and some of the forms of dislocation. Let it be remembered that a fall on the hip in an elderly person, accompanied by pain, helplessness, eversion of the foot, shortening, and prominence of the trochanter may be set down as fracture of the hip, whether we have crepitus or not. It should be treated as a fracture; the confinement necessary to demonstrate whether we have a fracture or not is nothing as compared with the trouble which might arise if a mistake were made. Long confinement and imperfect recovery may be certainly predicted, and lameness for life is nearly always the result. Death frequently follows these cases in the very old and feeble. In the young, dislocations must be looked for after falls from horses or wagons, or from any considerable height; diagnosis generally easy, but have been overlooked, followed by lifetime lameness. In the hip injuries never fail to call in help if you are in doubt. An oversight resulting in the permanent disability of young persons will never be forgiven. I have not time to carry this subject further.

This paper would be incomplete if I did not mention the use of the X-ray in the diagnosis of these obscure injuries. It is certainly the

most important advance of the age along this line, and is destined to come into general use. So far it has been largely in the hands of the specialist. The expense of the outfit and the skill necessary to its application has limited its use, but we should never fail to avail ourselves of its aid in diagnosis in all obscure injuries whenever practicable. But I must tell you that suits for malpractice have followed its use, parties claiming to have been injured by a too long or too powerful exposure to the ray. We hope the trouble will disappear with a more perfect method of application.

Now to sum up: Since any of us are liable at any time to be confronted by a suit for malpractice the question, What shall be done to avoid trouble? becomes a vital one. Many physicians and surgeons advise making yourself law-proof by putting all property out of your hands. No man who resorts to this can maintain his financial standing in any community. Another class of physicians advise taking out an indemnity policy in some insurance company, you paying an annual premium, the company agreeing to defend you to a certain amount in any damage suit which may arise during the existence of the policy. Just how efficiently and how faithfully they might defend the suit I am unable to say. Whether you resort to any of these expedients or not I am sure you will find the following summary of the paper just read in your hearing helpful:

1. Do not undertake to practice surgery unless you have some training and skill in that direction.

2. If you undertake it, leave nothing undone to secure success from the day of your first visit to your last, when you remove the dressing.

3. Never warrant results; let it be clearly understood that failure is not impossible, even in uncomplicated cases, after the most faithful and skillful treatment.

4. Make your first examination just as carefully and thoroughly as possible under the circumstances; make a plain and truthful statement as to the result of your examination, of the trying nature of the injury, etc., to the family, guarding your prognosis well. Make this statement, if possible, in the presence of some honest physician, or better still some intelligent layman.

5. Let the patient and his family feel that in calling you it is pre-supposed that they know your ability in work in this line; if they are unwilling to assume the risk of final results then they ought to call some one else.

6. After your first examination, if you are in doubt as to the diagnosis or as to plan of treatment, call a consulting physician at once.

7. In the treatment of charity patients and dead beats be especially on guard to protect yourself.

8. Remember the law holds you to the same accountability in the treatment of a charity patient as in the treatment of the rich.

9. Use only approved methods of treatment; leave the experimental treatment to the hospitals.

10. Treat your brother physician exactly as you would have him treat you. Never by word or act or look lend countenance to the suggestion of a damage suit, it matters not whether the physician be your personal friend or not. Express no opinion as to an unsuccessful result in any case treated by another physician unless he be present.

11. If in spite of your best efforts to avoid a suit one comes, never compromise or pay hush-money; fight to the death. Every physician should always stand ready to go to the assistance of his brother physician with his time and money if necessary in defending one of these suits for malpractice. There are many other things which I might say on this subject had I time, but I have already trespassed too long on your patience.

12. In closing, it may not be out of place for me to say that perhaps the wisest solution of the whole matter might be for each of you to "lay up for yourselves treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal."

GEORGETOWN, KY.

NASAL OBSTRUCTIONS.*

BY DUDLEY S. REYNOLDS, A. M., M. D.

Nasal obstructions were formerly classified as deformities of bone development and morbid growths, the term catarrh being used to designate every form of inflammation of the Schneiderian membrane; and it is not uncommon to find in medical literature elaborate dissertations upon dry catarrh, just as if we might have dry rivers or other dry streams of water.

Dr. Carl Michel, of Cologne, published in 1877 a treatise on diseases of the nasal cavities and vault of the pharynx wherein he described hypertrophy of the nasal bones and edema of the turbinates.

Since 1880, it may be fairly stated, the present state of knowledge concerning the nature of nasal obstructions and their influence upon both the general health and the special senses of smell, taste, and hearing has been developed. It is now thoroughly well understood that deformities in the bony framework of the ethmoid are often such as to permit even slight swelling in the Schneiderian membrane to block a considerable portion of the natural channels of respiration.

Children, the subjects of these deformities, frequently introduce foreign bodies into the nasal passages, and in some instances flies have been known to deposit their eggs in the nasal mucus. I have more than once observed maggots in the nasal passages. Chalky concretions forming rhinoliths are found. Mucocoele, myxomata, fibromata, and other neoplasms are often found obstructing the nasal passages. Exostoses, sometimes of the ivory type, are occasionally found encroaching upon the orbit, or simply blocking the respiratory passages of the nose.

It is notoriously true that the growth of infants is often seriously retarded by nasal obstructions. In the vault of the pharynx it frequently happens that large gelatinoid masses, commonly described as adenoid vegetations, are found. Sometimes the middle or inferior tubinate bones project abnormally into the pharynx, and in the presence of rhinitis of any form the Eustachian orifices are closed and the hearing at once seriously impaired. In other cases, pressure upon the recurrent laryngeal nerve may develop asthmatic breathing. Medical literature teems with illustrations of the cure of asthma by the removal of pharyngeal neoplasms.

* Read before the Kentucky State Medical Society, Paducah, Ky., May 7-9, 1902

The introduction of adrenalin enables the surgeon to reduce the swelling in the mucous membrane, often in the presence of edematous rhinitis, sufficiently for the exploration with artificial light of almost the entire sinuosities of the nasal cavities. In this way differential diagnosis between abnormal bone growths, ordinary neoplasms, foreign bodies, and pharyngeal growths may be easily made.

Nasal polypi were formerly removed with forceps, which often fractured and denuded large portions of the turbinates. We now pack the nasal passages, in cases of obstruction from any cause, with cotton wool saturated with adrenalin solution, and when the swelling is reduced we cocaine the membranes and explore the passages until we locate the foreign body, the pedicle of polypoid growths, or demonstrate the presence of abnormal bone formation or of adenoid vegetation; and in either case, under local anesthesia, we may operate with safety.

A little more than a year ago a lady came to me in distress with a discharging sinus situated at the superior nasal wall of the orbit. She had been to an eminent ophthalmic surgeon who, recognizing orbital abscess, had made an opening at the side of the nose just under the brow, and after evacuating considerable pus he packed the cavity with gauze and later instructed the patient how to keep the opening in the skin patent by the regular use of a probe. Examination disclosed a myxomatous polyp hanging from the ethmoid cells. The superior turbinate body had long since disappeared, from the pressure of this polyp. As the middle turbinate was well developed, its coverings being swollen, the middle and superior passages were securely blockaded. Passing a very narrow saw behind the middle turbinate as far up as it could be carried, and turning its edge toward the septum, I was able to cut off the turbinate body, after the removal of which the polypus was exposed and its removal easily accomplished. Following this, pus was seen exuding from the ethmoid cells. A one-fourth inch bone-drill was used to remove a section of the ethmoid plate, when a large amount of fetid pus escaped from both the frontal sinus and the orbital cavity. The protrusion of the eye ceased at once, and the patient quickly recovered. The old sinus, with its fungoid outlet through the skin, closed up in a few days and became a deep depression. The occasional use of a saline spray for the nose is all the treatment she has required since that time.

It may be fairly stated that nearly all cases of orbital abscess arise in the nasal cavities. The habit of blowing the nose is often responsible for serious and permanent obstruction in the nasal passages, especially in those whose passages are naturally very narrow.

The presence of particles of insoluble foreign matter in contact with the Schneiderian membrane develops irritation and hyperæmia, soon followed by hyperplasia and genuine hypertrophy. The conditions are now favorable for the development of polypi or adenoid vegetations. Facial distortions, abnormal development of the nasal passages and palate, and in some instances deafness, more or less severe, follow in regular order.

It is noteworthy that persons unable to breathe freely through the nose are supplied with insufficient oxygen, and it is no wonder arrested development of the whole body follows.

It is not my purpose to present a scientific discourse on nasal obstructions, for the reason that the subject is too elaborate, varied, and important to be disposed of in a single essay.

I can recall hundreds of instances of persons suffering with *styloidium lachrymarium* in whom no abnormality of the tear passage could be discovered. Examination of the Schneiderian membrane, the site of origin of nearly all cases of obstruction in the tear passages, as well as of infectious diseases, which sometimes become chronic in the tear sac, discloses an amount of swelling in the covering of the inferior turbinate bones sufficient to close the outlet of the tear duct.

I have a gentleman under treatment now in whom slight deformity of the septum and turbinate bodies make the passages so narrow that a little irritation in the lining of the nose produces almost complete obstruction to the passage of air. Epiphora caused him to seek my aid. Careful inspection showed that a little swelling in the covering of the inferior turbinates closed the outlet of the lachrymal passages on both sides. An eminent confrère, on the day before, had proposed an operation for opening the tear passages. The gentleman, fearing to be severely punished by such a procedure, sought other counsel, with the result stated. A saline spray cleared out the accumulated mucoid matter, while a little terebene with menthol in liquid albolene promptly reduced the swelling and permitted the tears to flow *per viam naturales*.

A young man twenty-four years of age had had an offensive discharge from the nose since boyhood. He had been the rounds of the profession. An eminent confrère had removed the inferior and a portion of the middle turbinate from the left side. The discharge was watery at times, and so offensive as to make him an intolerable nuisance in the household. In this condition he consulted me. Carefully spraying the passages and packing the superior crypts with cotton wool saturated with a solution containing dessicated adrenals reduced the swelling so as to expose a

black-looking streak in the crypt between the superior turbinate and the septum on that side. Sweeping the crypt with a blunt hook, drawn from behind forward, I engaged a very hard body, the removal of which caused very profuse hemorrhage. Placing the foreign body in a vessel of chloride of sodium solution, I allowed it to remain until the following day, when careful examination showed it was composed of cotton wool embedded in a very hard, black mass. I learned subsequently that the young man had been ill but once in his life, when at the age of ten years he had typhoid fever, in the course of which he had suffered with alarming hemorrhage of the nose. Dr. C. attended him. Visiting Dr. C., I inquired if he remembered George S. He said yes, that he remembered having attended the boy in an attack of typhoid fever, and that he nearly bled to death with hemorrhage of the nose, and that after exhausting every means of checking it he finally resorted to the use of portions of cotton wool dipped in Monsel's solution, with which he packed every crypt. This mass of cotton wool and persulphate of iron had remained in the nasal passage for fourteen years. It is needless to say that antiseptic sprays brought about a speedy recovery after the removal of the cotton.

A young lady of most excellent family suffered obstruction of the nasal passages, with offensive breath. The disease having developed within the space of two weeks, it was pronounced cancer by the family physician, an opinion which had been concurred in by two consulting specialists. Careful examination exposed such a spongy appearance of the septum, with ragged ulceration, as to arouse my suspicion, and I asked to see the skin of her neck, shoulders, and arms. Distinct syphilitic rupia was observed. Pursuing my search, I induced her to expose her shin, which was full of nodes, with several large dark scaly spots on the limb. Two grains of iodide of potassium in one half pint of water every two hours cleared up the nasal passages entirely within three weeks' time, and she passed out of my hands to be treated by a specialist in skin diseases.

I might multiply the list of illustrations indefinitely, but my purpose is simply to invite the attention of the general practitioner to some of the forms of nasal obstruction requiring critical inspection only for the discovery of their nature.

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RÖENTGEN X-RAY THERAPY.

That the Röntgen X-ray is with us as a therapeutic agent to stay there can be no question. The brilliant results obtained by its use in cases of cancer, and especially epithelioma, has done away with the horror of the knife which led many patients to defer an operation until the time had passed when an operation would yield the best results, and often the operation was only permitted when it became a necessity, to save the patient from immediate death. The cure of local tuberculosis, carcinoma, and the relief of some cases of sarcoma show very conclusively that there is much to be expected from the Röntgen X-ray. Whatever offers relief in the class of diseases mentioned above will certainly be earnestly sought after by both patient and physician, and with the concordant action of both patient and doctor whatever virtue that is possessed by the Röntgen X-ray will certainly soon be manifested.

ST. ANTHONY'S HOSPITAL.

St. Anthony's Hospital is located on a lot with a frontage of fifteen hundred feet on Barret and Wickliffe avenues, in the healthiest and most beautiful part of the city, and is one of the largest and most modern hospitals in this country. In its construction and equipment it combines the latest of everything which experience has shown to be essential in the best hospitals for the perfection of excellent results in

both the medical and surgical treatment of patients. It is five stories high, fire-proof, and has many well constructed and elegantly furnished private rooms and small wards. In the ventilation, heating, and plumbing hygienic and sanitary laws have been absolutely observed, and especially so in the operating and sterilizing departments.

This magnificent institution is under the control of the Sisters of the order of Saint Francis, who have a number of hospitals scattered over this country, viz., in Denver, Col., New Albany, Ind., Lafayette, Ind., Terre Haute, Ind., Logansport, Ind., Hammond, Ind., Cleveiland, Ohio,



Omaha, Lincoln, Columbus, and Grand Island, Neb., Evanston, Ill., Memphis, Tenn., and Colorado Springs, Col. This great acquisition to Louisville is duly appreciated by her citizens, who have given liberally to the hospital and who will continue to show their appreciation in every way becoming a grateful people. Too much praise can not be accorded the good Sisters who have charge of this institution, whose doors are open to all classes and nationalities, money or no money.

These Sisters are truly Good Samaritans; they bind up bleeding wounds and give water to the thirsty and food to the hungry, not for the sake of dollars and cents, but for His sake, the Great Physician's, who died on the cross that we might live.

Current Surgical and Medical Selections.

ACUTE DELIRIUM AND UREMIA.—A. Cullerre reports two cases which bear out the idea that some cases of delirium are due to nephritis. In the first case, that of a woman picked up in the street and taken to an asylum, suffering from delirium with hallucinations of vision and uncontrollable restlessness, an autopsy showed no other lesion than that of granular kidney. In the second, that of a man of forty-two years, there was mental excitement with confused religious mania, turning to mutism, and later to profound melancholy with suicidal notions. Amelioration of the condition occurred, but nine years later the patient again was seized with homicidal and suicidal mania, followed by prostration, aneuria, continual vomiting, mussion, coma, and death. No autopsy was held, but the symptoms of uremia were, in the three days preceding death, too evident to be mistaken.—*Archives de Neurologie (Medical Record)*.

A CASE OF PSEUDO CIRRHOSIS OF THE LIVER.—M. Strajesko reports the case of a man suffering from this rather rare disease, which is characterized by the symptoms of true cirrhosis, but differs from it anatomico-pathologically, there being no proliferation of the connective tissue of the liver. It is due to an inflammatory process which is chronic in its course and invades several serous cavities, resulting often in complete adhesions of the pericardium, the pleura, and thickening of the peritoneum covering the diaphragm and the liver. The cause of the inflammatory process is not known, but tuberculosis is frequently found in the family history of the patient. Clinical diagnosis of the disease is difficult, but is helped by coexisting heart disease and by long observation, which shows that the liver diminishes in size, that the spleen does not increase, and that ascites is quickly produced. Treatment consists in regulation of the heart's action and in puncture for the relief of the ascites. In some cases calomel is of use, and may even render the treatment by puncture unnecessary.—*Russki Arkhiv. Patologii, etc. (Ibid)*.

WHENEVER the most accurate approximation of tissues is required, as in plastic operations or in operations involving the abdominal wall, it is most important that all bleeding should be checked, since collections of blood prevent the tissues from adhering closely, and the serum discharged may act as a medium for infection. In placing the skin sutures it is important to see that no small vessel has been pierced by the needle. If this has occurred it is best to withdraw the suture and place another, as the bleeding in the layers beneath the skin may be quite considerable. When this occurs the blood coagulates, and after six or seven days a little discharge of serum may take place, lasting two or three days more, or even longer. This discharge occurs between the lips of the wound or along the track made by one of the stitches; an infection may take place unless great care is exercised.—*International Journal of Surgery*.

THE DUTY OF A PHYSICIAN TO HIMSELF.—The newspapers announce the death of a venerable physician in the interior of the State, who after a practice of fifty-five years leaves uncollected book accounts amounting to \$50,000. It will be in order now for the lay press to moralize the case, and to refer to the noble almsgiving propensities of the medical profession. Some people will see in this story the evidence that physicians are a noble, self-sacrificing class, while on the other hand certain Philistines will say that the case simply proves that doctors have not sense enough to collect their bills. Judgment in such a case depends somewhat upon the point of view. Both interpretations are valid, but on the whole the Philistine judgment is the one that goes straighter to the point. It is somewhat deplorable that the medical profession should have forced upon it the reputation of being an eleemosynary corporation simply because it has slack business methods, and it is not desirable that it should have to support such an undeserved reputation for benevolence at the expense of its own bread and butter. The dear public is not slow to adopt the comfortable idea that physicians practice medicine for the love of their fellow-men, and to let the doctors have the full benefit of this reputation when the bills are presented. There is danger of insincerity and cant on one side and of injustice and fraud on the other. Fifty thousand dollars in uncollected book accounts is a poor asset for any doctor's estate.—*Philadelphia Medical Journal*.

HIGH TENSION.—In every line of business there continues to be, particularly in our own country, an unwarranted rate of speed. The fierce conflict and rivalry among men is resulting most disastrously to our people. There can be but one result where men toil ceaselessly, giving little or no attention to the care of their bodies, and that result is physical bankruptcy at an early date. The writer's attention has been startlingly drawn to this fact by a series of fatalities among his professional friends and acquaintances. Within a comparatively few months seven of his fellow-physicians, noted for their ceaseless toil and apparently tireless energy, have died. In each case the cause of death was to be found in the kidneys. Our attention has been called to the fact by German and American writers that it is no longer an accepted truth that the excessive or continuous use of alcoholic liquors is necessary for the production of disease of the kidneys, particularly the parenchymatous variety. It is now recognized that auto-intoxication, found so frequently in so-called "hustlers"—persons who work unceasingly, eat and sleep irregularly, take no systematic exercise—is by all odds the most frequent cause of kidney degeneration.—*Medical Herald*.

CHALODERMIA.—This term is employed by L. von Ketly (quoted in New York Medical Journal) to a peculiar change observed by him in the skin of certain parts of the body in which, instead of being merely excessively ductile or distensible, it hangs in loose, flabby folds. In a case observed by him in a woman of thirty, the skin appeared on the thighs like a baggy pair of drawers.—*Denver Medical Times*.

PHYSICIANS AS BUSINESS MEN.—In this intensely utilitarian and commercial age doctors must adopt sound business methods. To charge well and collect systematically is a good plan to follow. People appreciate you more if you value your own services. They pay nearly everybody else better than the physician. The doctor gets less when he saves a human life than the undertaker would have received if he had had the patient to bury, and much less than the lawyer would have charged if he had had the chance to settle the succession. If your services are valuable, make the patient understand and pay for them in proportion. Your family will be better off and the profession will have a better business reputation, even if there are a few people less who say, *after you are dead*, how kind you were.—*New Orleans Medical and Surgical Journal*.

MALARIA.—The chief interest in connection with malaria at present centers in the relation of this disease to the anopheles mosquito. Mauser, for example, allowed himself to be bitten by mosquitos fed in Rome on a case of tertian malarial fever. The period of inoculation was between ten and sixteen days; he then developed fever, and the parasites were found in the blood. Nine months later, when he had been apparently cured by quinine, he spontaneously developed malaria.

Young stated in a discussion before the British Medical Association that in Hong Kong the occurrence of malaria was always associated with the appearance of the anopheles mosquitoes; and Manson urged that the natural conditions antagonistic to this insect should be discovered and employed to exterminate them. Fernside stated that it was impossible to eradicate the mosquito in India, because to do so would destroy the rice-swamps. Natal stated that the anopheles are attracted by dark colors and repelled by light colors, a hint that may be of practical use. On the other hand, Egbert states that in the mountains of Honduras, at an altitude far above the mosquito belt malaria, fever of both the quotidian and tertian types is frequent, and he thinks it is propagated by fleas.

The prophylactic treatment, of course, consists in avoiding mosquito bites, for which Bras employs the punkah or the electric fan, and Macgregor recommends extermination by filling the swamps or covering the pools with kerosene. He warns that results should not be expected for two or three years, and in the meantime prophylactic doses of quinine should be employed. Ewing contributes a valuable study of the life history of the malarial parasite, which serves to show how incomplete is our knowledge of this organism at present. The relation of quinine to malarial hemoglobinuria is still unsettled.

Klein reports fifteen cases in which this complication followed almost immediately the administration of quinine. He cautions against the careless administration of the drug in large doses, and thinks that black water fever is the result of poisoning by it. Smith and Taylor report two cases, one in an officer who had been taking quinine in moderate doses for a long

time; the other in a negro soldier. The parasites appear to have been exceedingly few in the blood.

Two extraordinary complications are noted. The first, observed by Mellroy, was a negro who went into a state of coma lasting seven hours; bullæ developed upon the knees, and four weeks later they became gangrenous. The æstivo-autumnal parasites were found.

The second, observed by Ewing, was a girl who was brought to the hospital suffering from fever, vomiting, and constipation. There was considerable albumen in the urine, and a diagnosis of typhoid fever with acute nephritis was made. At the autopsy the renal tubules were found packed with malarial parasites. Ewing concludes as the result of a study of recorded cases that malaria may produce acute degeneration of toxic origin in the kidneys, or focal necroses with numerous hemorrhages, and the parasites may be massed in the renal capillaries, causing hemorrhage and thrombosis. The last form occurs only in æstivo-autumnal infections.—*Philadelphia Medical Journal*.

THE PRODUCTION OF SERA.—Municipalities have usually quite enough to do to keep themselves ordinarily respectable, without going into the hardware, furniture, or pharmaceutical business. The manufacture of common honesty in official life is at least an indispensable qualification if they desire success in the pharmaceutical laboratory, and until municipalities show themselves more abundantly provided with incorruptible officials the manufacture of serums and vaccines is as much beyond their capacity as is the mensuration of the mountains of the moon.—*Medical Fortnightly*.

HOW TO SLEEP SOUNDLY.—The "sure cures" for insomnia are almost innumerable. One of the latest is that of a German, Prof. Fischer (Doctor's Magazine), who claims that it will not only bring about profound and refreshing sleep, but also increased mental strength. The discovery consists essentially in putting the pillow or pillows under the feet instead of the head. The advantages claimed for the innovation are that the venous circulation is favored and the heart needs to work less during sleep, hence the tired feeling on waking is prevented. The professor claims to be in receipt of a great many communications from ladies all over the German Empire who are profuse in their praises of his epochal discovery.—*Denver Medical Times*.

REASONS FOR EMPLOYING HOT AIR.—The Medical Fortnightly gives these: 1. Dry heat is a valuable pain reliever without any of the depressing effects common to drugs. 2. In connection with constitutional and medicinal treatment we have in it a positive curative agent. 3. It is a stimulant to rapid repair and absorption. 4. It is one of the most valuable eliminative agents we possess. 5. Where indicated, it possesses a sedative action on the nervous system obtained by no other means.—*Ibid*.

TETANUS AFTER LAPAROTOMY.—Coe (American Journal Obstetrics, September, 1901) reports two cases of tetanus which occurred in the General Memorial Hospital, New York, at eighteen months' interval; there was no assignable cause. The hospital was opened in 1887, and the conditions are very aseptic; in both cases the operations were "clean," and both were in Coe's wards. The first operation was the removal of a double salpingitis with cystic ovaries. There were no complications at the operation; convalescence was without fever. Stiffness of the neck was felt on the twenty-first day, trismus next day. Death occurred on the thirty-sixth day; serum injections proved unavailing. The second patient underwent panhysterectomy for fibroid uterus and diseased tubes. She did well until the ninth day, when stiffness of the jaw set in; on the tenth day she could not swallow; fifty cubic centimeters of serum were injected into the veins; general convulsions occurred the night afterward; a second injection was made; death occurred on the eleventh day. Both patients were hysterical, so that diagnosis was obscure at first.—*British Medical Journal*.

NIGHT SWEATS IN PHTHISIS.—All physicians know the difficulty of keeping the night sweat of phthisis in control. Almost every known remedy has been tried since the Greeks used agaricin down to the present. Graves and Stokes used Dover's powder, which in time gave place to mineral acids, zinc and belladonna, atropine, and a host of other specifics. To the long list Nolda adds tannoform, the external use of which he recommends. In seven out of eight cases in which he had the front and back of the thorax dusted with powdered tannoform, it checked the sweating (Berl. Klin. Woch.). This method of treating the symptom has the advantage of not interfering with the digestive function, which is usually so imperfectly performed in such cases; neither does it in any way preclude the use of any of the other antisudorifics. The powder of itself should prove an agreeable application to the skin, and promote the comfort which is such an essential factor in producing sleep in such cases.—*Medical Press and Circular*.

GASTROENTERIC FLATULENCE.—The Clinical Review recommends the sulphocarbolate of sodium. In the gastric form the drug may be given in the dose of 5 to 10 grains in aqueous solution after meals. In the intestinal form it is best administered in enteric-coated pills of $2\frac{1}{2}$ to 4 grains each. For the frequently coexisting constipation the aromatic fluid extract of cascara sagrada may be given.—*Denver Medical Times*.

PATHOLOGY OF INFANTILE ATROPHY.—According to Baginsky (Interstate Medical Journal) marasmus is a specific disease, depending upon general degeneration and atrophy of the greater portion of the duodenal and jejunal mucous membrane, subsequent to a severe intestinal infection. He has found that only about half of the nitrogen of the food is absorbed, the remainder being excreted with the feces.—*Ibid*.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

INTESTINAL OBSTRUCTIONS: REPORT OF FIVE CASES.*

BY AUGUST SCHACHNER, M. D.

Professor of Surgery, Louisville Medical College, Louisville, Ky.

The importance of early exploration and early interference in abdominal disturbances in general and in intestinal obstruction in particular is too apparent to require any additional emphasis. These cases were taken from a number operated upon during the past fifteen months and reported here because of certain features of interest they possessed.

Although devices and clamps of one variety or another will always occupy a place in surgery, the tendency is, however, in the direction of the needle and thread as the true surgical method. When we are able to reach conveniently the seat of resection or anastomosis, and the patient is not *in extremis*, the time saved does not compensate for the step backward in resorting to a device.

The opening and closing of the abdomen, the necessary examinations, together with the resection and anastomosis, required but fifty minutes in the first case.

What seems to be more necessary than either devices or clamps is a little more practice with a needle and thread and an understanding of not one but several methods of resection, and with these in all but a very limited number of cases the operator will be able to get the most satisfactory results.

Case 2 is of interest as illustrating the slight degree of intussusception and the peculiar symptomatology of the case. It is important to note

*Read before the Kentucky State Medical Society, Paducah, Ky., May 7-9, 1902.

the influence upon the pains the slightest nourishment would provoke and maintain peristalsis until disposed of. In this we have a practical hint that may be applied in the diagnosis and treatment of other intestinal disturbances. The pains followed the ingestion of food with such uniformity that the child abstained from food almost altogether until reduced to emaciation.

Halstead, of Chicago (*Annals of Surgery*, Vol. XXXV), referred to the statistics of Kelynack, in which Meckel's diverticulum was present eighteen times in one thousand four hundred and forty-six post-mortems. In three thousand four hundred examinations in St. Bartholomew's Hospital there were twenty-seven in which Meckel's diverticulum was found, making one in every one hundred and twenty-six bodies. The same writer reviews Leichterstem's cases of intestinal obstruction, numbering eleven hundred and thirty-four. Thirty-nine per cent were due to intussusception, 9 per cent to bands and adhesions, and 6 per cent to diverticula.

Of another series of cases collected by Haven, Duchanssoy, and Brinton, making in all nine hundred and ninety-one, in about 6 per cent the obstruction was due to Meckel's diverticulum. Halstead believes that Meckel's diverticulum probably occupies a place next to intussusception as a cause of intestinal obstruction.

CASE I. *Multiple Intestinal Strictures of Tubercular Origin; Intestinal Resection and Ileo-colostomy; Recovery from Operation; Death later from General Tuberculosis.* Mr. C., aged thirty-six; occupation, farmer. Referred to me by Dr. S. T. Botts, of Glasgow. Family history revealed tuberculosis upon the maternal side; personal history prior to present trouble negative.

History of present trouble: About eighteen months previously the patient swallowed a pin. According to his version it was arrested for a short time in the esophagus. After the lapse of a number of days there appeared a pain in the region of the umbilicus; this persisted, with varying degrees of intensity, throughout the whole eighteen months. At times it amounted to no more than a sense of discomfort, and on several occasions during part of the eighteen months the pain was so excruciating as to require large doses of morphine. He referred to his trouble as being obstructive in character. He insisted that he could feel the arrest of the intestinal contents at one point, and at a certain time feel the obstruction relieving itself. This relief was usually hastened by the ingestion of certain digestive ferments. In the last six months he lost some weight,

but otherwise appeared healthy, and always led an active life. Examination of the abdomen was practically negative; neither inspection, percussion, nor palpation yielded any information.

The patient was accompanied by his physician, who desired to be present at the operation but was unable to remain in the city for any length of time, and therefore the usual opportunity for the observance of the case was lacking. The day before the operation, as well as the day of the operation, his temperature ranged between $99\frac{3}{4}$ degrees to 100 degrees. An exploratory incision was proposed, reserving the right to deal with the condition as thought proper. Upon opening the abdomen the cecum was represented by a mass almost twice the natural size, and distinctly inflammatory in appearance. Upon manipulation the mass was rather dense and considerably thickened. The entire mass was firmly bound down, but no tubercles were apparent. Upon inspection of the small intestine two strictures were found at about the middle of the ileum; these occupied three fourths of an inch of the intestine, and were located about six inches apart. These strictures represented an almost complete occlusion of the intestinal lumen. To the touch it was apparent that quite a thickening of the intestinal wall had occurred, and upon inspection there appeared what seemed to be a few miliary tubercles close to the mesenteric border of the intestine. Careful inspection failed to disclose any tubercles in any other portion of the abdominal cavity. From this three points of obstruction were apparent, the two strictures just named and the obstruction in the cecal region. Careful examination of the cecal mass determined the inadvisability of its removal. To overcome the cecal obstruction an ileo-colostomy was performed by making a communication between the lower portion of the ileum and the colon, just above the sigmoid flexure. The communication measured four inches in length. In making this communication three successive rows of sutures were employed. The condition of the patient being still favorable, the other strictures were overcome by means of a resection performed after the method of Woelfler. This included both strictures, the amount of intestinal tract removed being about eight inches. The time consumed in this operation was fifty minutes. The intestinal symptoms were relieved at once. The wound healed solidly except for a distance of about one inch at its lowest point, and although no distinct abscess occurred the process was granular and of a glazed appearance, and yielded very stubbornly to epidermization.

The patient left the infirmary at the end of a month. Although the obstructive symptoms had entirely disappeared a slight fever persisted,

and he failed to make any progress in regaining strength. Three months later he died of general tuberculosis. Post-mortem examination (for which I am indebted to Dr. Botts) revealed general tuberculosis of the abdominal cavity. The result of the intestinal operations was all that could be desired. Microscopic examination of the resected specimen verified the tubercular nature of the trouble.

CASE 2. *Intussusception, Operation, Suture of Intestine: Recovery.* L., aged six years. Referred to me by Dr. A. F. Buren. Child presented the following history: Family history good; he had never been sick before; was taken ill about a month previous. The onset of present illness was rather sudden, following soon after eating a large amount of dried fruit. Patient began to complain of severe abdominal pains, which at first were constant, but after a lapse of a few days became intermittent in character. He had been treated for weeks with various drugs, including opiates, bismuth, digestive ferments, and vermifuges. When seen by me his condition was as follows: Extreme emaciation, temperature and pulse normal, no abdominal pain upon palpation nor any tumor discernable; pain occurring at varying intervals from a half to several hours, and always precipitated and aggravated by taking any form of nourishment; tendency to extreme constipation, but no distinct obstruction. An exploratory incision revealed an inflammatory condition about the ileo-cecal valve, which upon closer examination consisted of a considerably thickened ileum, that was protruding into the cecum to the extent of one inch. The intussusception was reduced, the ileum incised, and the incision in the intestine closed by means of Lembert sutures. The child made an uninterrupted recovery, all symptoms disappearing.

CASE 3. *Obstruction from Meckel's Diverticulum.* H. K., aged seventeen years. Referred to me by Dr. L. J. Herget. Family history good. When seen was suffering from acute appendicitis of forty-eight hours' duration; operation was proposed and carried out. The appendix was found gangrenous, but not ruptured; its removal was carefully effected and the stump buried by means of a double row of sutures. The patient made a rapid recovery. During the operative procedure the cavity, as is usual in such cases, was carefully protected, so that practically only the cecum was exposed to manipulation. For this reason the presence of a Meckel's diverticulum was overlooked.

About a month after leaving the infirmary he secured an entrance to the pantry and devoured a number of apples. This exploit was rapidly followed by colicky pains, which became so severe that his family physician

was sent for, who administered opiates with but temporary relief. When the effect of the opiates wore away the pain reappeared in its former severity. When seen by me he was suffering from severe abdominal pains, which were referred to a point on a level with the umbilicus and almost one inch to the right. Temperature 99 degrees, pulse 100; slight distention, but no tumor. He was removed to the infirmary and on the following morning, with the assistance of Dr. W. C. Dugan, an exploratory operation was carried out. At the time of the operation the temperature reached 100 degrees, pulse 112; pain still severe and considerable distention. Upon opening the abdomen a few ounces of peritoneal fluid escaped, and distended loops of intestine bulged through the opening. In following out the distended coil of intestine an acute angulation was encountered that was occasioned by the adhesion of the Meckel's diverticulum to another loop of intestine. This diverticulum was short and stubby in character, measuring about one inch in length and half an inch in diameter. The process was obliterated by folding it parallel with the bowel and then burying it with a row of sutures. The abdomen was closed. For two days following the operation marked evidences of peritonitis persisted. On the third day the intestinal functions were reëstablished, and with this all evidences of peritoneal disturbances disappeared.

CASE 4. *Intussusception due to a Lumbricoid.* While on my way homeward from a case of appendicitis in Barren County, I was met by a messenger and summoned to the following case: B., aged five years. Family history good; personal history good. Six days previously he suffered for two days from a disturbance that was diagnosed by his attending physician, Dr. Tompkins Botts, as an intestinal obstruction due to an intussusception. This attack lasted for two days. The child, when seen by me, had been suffering for about eight hours from its second attack. Its condition was as follows: Temperature 99 degrees, pulse 120; abdominal examination negative in character. The patient was in extreme pain, rolling and tossing about, and vomiting a dark fluid. The diagnosis of an intestinal obstruction was made and an immediate operation urged. The parents were wholly unprepared for such advice and insisted upon a delay, hoping that the next few hours might bring an improvement. Instead of this the child grew steadily worse, the pains became more severe, the vomiting more frequent and stercoraceous in character; the pulse became rapid and feeble. At midnight the parents consented to an operation, which was carried out as rapidly and carefully

as the crude and imperfect conditions permitted. Dr. S. T. Botts administered the anesthetic, and his son, Dr. Tompkins Botts, acted as my only assistant. The abdomen was opened and multiple intussusceptions were revealed. Two of the intussusceptions represented a section of three or four inches of intestine; a third consisted of ten inches of intestine that had become invaginated. All these involved the ileum. The invaginations were readily reduced. Upon reducing the chief of these a good-sized lumbricoid was felt and seen through the intestinal wall; the intestine was incised and the parasite removed. The intestinal opening was closed by means of the Lembert suture; the abdomen was closed. For the next six hours the relief from pain was complete, and the nausea was only that which ordinarily follows the administration of an anesthetic. Toward the middle of the following day there was some return of pain, the vomiting increased, and at the close of the first day symptoms returned similar to those prior to the operation, but not of the same severity. The child died at the beginning of the third day.

CASE 5. *Obstruction Due Possibly to a Hernia in a Retro-peritoneal Fossa.* C. K., aged four years. Referred to me by Dr. A. E. Buren. Family history good; personal history good. The child had been perfectly well until five days previous. Onset sudden, consisting of severe abdominal pains; these were paroxysmal in character and varying in intensity. The occasional vomiting was of a clear mucus; considerable tenesmus and watery evacuations, mixed with greenish coagula and a clear tenacious mucus, formed in character, and not unlike a very thin tapeworm. The abdominal inspection was negative in character; palpation likewise yielded nothing; no tumor was visible, and there were no especial points of tenderness. Upon opening the abdomen distended loops of intestines presented themselves. After a careful search about the cavity the seat of the disturbance was located on the right side, in the cecal region. The intestines in this region were crowded together but not adherent, although very much congested. After some manipulation the cecum was brought into view.

The age and condition of the child did not permit of as careful an investigation as one would desire; there was no invagination, nor could any volvulus be detected; no bands were observed. The cecum, the beginning of the colon, and the lower end of the ileum seemed to be crowded upward and backward. With some traction the entire mass was brought into view. The appendix was in striking contrast to its surroundings, resembling a wax taper more than a vermiform appendix,

and the cecum was slightly congested. The intestine was opened for a more careful examination of the condition, with negative results. The appendix was removed and the stump was buried by means of a row of sutures. By this time an hour and a quarter had elapsed and the condition of the patient was such as to make all further efforts unadvisable. The precise nature of the obstruction was not determined, but in the absence of any bands, invaginations, or volvuli, which it is reasonably certain did not exist, it was suspected that in a child of this age the obstruction was due to a hernia into one of the retro-peritoneal fossæ. The patient was removed *in extremis*, and for a time reaction was doubtful. All symptoms disappeared, however, and the recovery was uninterrupted.

LOUISVILLE.

SUGGESTIVE THERAPEUTICS, OR PSYCHOLOGICAL MEDICINE.*

BY ANNA G. SEDAM, M. D.

Psuche-logos, or psychology, is a word of Greek derivation, meaning a discourse upon the organs of thought and judgment, or the thinking organization of the body, which signifies the reason; the understanding, or the organ of thought and judgment, or that which is opposed to the corporeal body. The body is a thing of vibrations and it lives in an atmosphere of vibrations. It lives by the vibrations of the heart. It moves by the vibrations of the muscles. Its muscles are animated or stimulated to motion by the vibrations of its nerves.

It recognizes the outward sensations by vibrations alone, as the five senses are but organs, perceiving different classes of vibratory motions:

1. Hearing, through sound waves.
2. Sight, through light waves.
3. Touch, through vibrations caused by actual contact.
4. Smell, by vibrations caused by chemical action.
5. Taste, by vibrations caused by chemical action also.

These vibrations are conveyed to the brain or central motor system and by it classified and transmitted to that within us which can reason and think, whatever you wish to call it, and we are then said to know what the vibrations convey.

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On the contrary, if that within us which is the life germ desires to convey its thoughts or sensations, it does so by starting in the brain certain vibrations which are conveyed through the nerves to the muscles, causing vibrations of sound, etc., which again are conveyed to the life germ of some other bodies in the manner stated before, and thought is communicated.

Knowledge is but the memory of vibrations of the past, or heaping up of sensations. Reason is but the combination of the effects of past vibrations, and this faculty of reason proves the life germ, for it is only that beyond the brain which can compare vibrations or sensations, which can classify and compare the impressions of past vibrations on the brain cells. We are all actuated by natural and well-defined laws that never vary in their action.

The mind, conscious or subconscious, controls the bodily system and keeps it in order and in action, and it is only when the control of the mind ceases that the bodily organism becomes deranged and sickness occurs. We then give medicine, that whips up the vibrations of that organ, to assist it until it is again controlled by the natural vibrations of the system caused by the life germ called the mind. If, then, it is a deranged vibratory system causing either too fast or too slow vibrations that makes sickness, and this vibratory system has its center in the brain, which is again affected by vibrations started within itself by the life germ, why then can not these vibrations be controlled and regulated by the proper action of the life germ or soul, as it is sometimes called? We perceive only by experience with vibrations, and if we use our experience we think and convey to other minds vibrations; if we can do this, we can then surely convey the proper vibrations to the organic members of our bodies. Suggestions from other minds can cause us to affect the vibratory systems and thus our organic bodies. Then apply the same rule to other organic sensations. The physician's mind, by certain vibratory action, directly affects the patient's mind and leads it to cause the proper vibrations in the body of the patient, and you have suggestive medicine.

This may give us some idea how hypnotism, suggestion, and auto-suggestion are applied. It is no longer necessary in writing on hypnotism to waste words in discussing whether the condition is real or imaginary. Every careful, conscientious, and scientific observer has been convinced of the genuineness, credulity, superstition, and at times chicanery and fraud, that have been from time immemorial so

intimately associated with hypnotic exhibitions that until of late but few honest and scientific workers have dared to investigate the subject, and even at the present time only a comparatively small number care to make known the results of their investigations of hypnotism, lest the epithet "knave or fool" should be applied to them. Charcot's classification consists of the cataleptic, lethargic, and somnambulic states. Hypnosis may vary in degree from the slightest disturbance of the normal conditions, in which the subject may be apparently conscious of everything that is said or done, to deep sleep almost amounting to stupor, in which the person is oblivious to his surroundings for the time being. The more one endeavors to study hypnotism for therapeutic purposes, according to the various classifications of the different states of hypnosis, the more impracticable any classification seems, and individual experience in dealing with different persons is the best guide as to the depth of hypnosis that it is necessary to obtain to make suggestions of the greatest value. Moll believes that the deeper the hypnosis the better the effects of suggestion.

Mentally weak, fickle, and very impressionable people are difficult to hypnotize. The feeble-minded, the insane, and children of very tender age do not readily yield to hypnosis. Self-possession, the ability to concentrate the thoughts on the things suggested to the exclusion of all others for the time being, a desire to be hypnotized, and confidence in the hypnotist are the most potent factors that aid in making one susceptible to the hypnotic influence. Ignorance and education, of themselves, have little or no influence on the induction of hypnosis; but it is often found almost impossible to hypnotize the busy and overworked professional man, not because he is educated, but owing to the multitude of thoughts, cares, and worries which prevent him concentrating his mind on suggestions to the exclusion of everything else, without which it is impossible to induce hypnotism by the suggestive method. It is sometimes impossible to hypnotize the ignorant, superstitious person, not because he is ignorant, but from the fact that his mind is disturbed by superstitious fears of hypnotism. In the lower walks of life those who possess the most common sense are the most easily hypnotized. The persons who have been trained to implicit and unqualified obedience to commands most readily yield to hypnosis. Soldiers and sailors are good subjects. It is said that any one who can concentrate his mind on suggested trains of thought relating to the natural phenomena

of sleep, to the exclusion of any other thought, is capable of being hypnotized.

Jeremiah T. Eskridge, an authority on hypnotism, says: "Were it not that we possess better and more reliable anesthetics in chloroform and ether, hypnotism would to-day be extensively employed in surgery." He tells us that Dr. Esdaile records two hundred and sixty-one surgical operations performed by himself in India while his patients were insensible to pain from hypnotic suggestion. Two hundred of the operations consisted in the removal of tumors varying in weight from ten pounds to one hundred and three pounds. Numerous surgeons have operated under similar conditions.

To quote Dr. Eskridge again, "I have never succeeded in improving the condition of a typical hysterical subject by means of hypnotism, although many writers report success in a fair proportion of cases. I have no experience of hypnotism in the treatment of chorea. In epilepsy I have signally failed. Insomnia may be cured in some instances by repeated hypnosis, but relapses are frequent if hypnotic suggestions are not repeated from time to time. The cases of stammering which I have been able to help for a time relapsed after the treatment was discontinued. I have never succeeded in hypnotizing an insane person. While I believe that hypnotism properly used has a place in medicine, it is rather a limited one. In appropriate cases it is an aid to other measures, and should be employed as the sole means of cure in scarcely any case, no matter how trivial the ailment may be."

The word hypnotism, as you are doubtless aware, is derived from the Greek hypnos, signifying sleep. The hypnotic state, according to Dr. Braid, proceeded rather from the physical and psychical condition of the patient himself than from any outside influence. Directions given for inducing the hypnotic state which some persons have followed with considerable success are substantially as follows:

Take a silver piece, or some bright object, and hold it between the fingers of the left hand about a foot from the eyes of the person on whom you desire to experiment, in such a position above the forehead as to produce the greatest strain on the eyes compatible with a steady, fixed stare at the bright object. The subject must be directed to rivet his mind on the object at which he is gazing. The symptoms are, first, a contraction of the pupils of the eye; then they will dilate considerably; then after they are widely dilated the operator should extend the first and second fingers of the left hand, keeping them slightly

separated from the bright object, toward the subject's eyes. The eyelids will probably close with a vibratory motion. After ten or fifteen seconds have elapsed the patient can be made to keep his arms and legs fixed in any position in which the operator places them.

It will usually be observed that all the senses except sight become highly exalted; the special senses are the first to exhibit this exaltation; the muscular sense and sensibility to temperature become remarkably keen; but this exaltation of function is followed by depression or torpor, placing the body in a condition far below the state of natural sleep. Only when in that torpid condition is a person thoroughly hypnotized.

But we are not all hypnotists. And would we practice it if we could? Disguise the fact as one may, hypnotism, according to its accepted exponents, is a system of mental bondage, a system which boasts of the ability of one mind to hold another in subjection. The case of a hypnotized person is about parallel with the case of a slave dependent on the good nature of his master, a woman dependent on the caprice of her husband, or a nation dependent on the personal character of a solitary head; at any moment the hypnotic influence may be withdrawn; at any moment the kind and wise hypnotist may remove his protecting arm; and as human nature is not yet infallible and unchangeable in all its operations on the external plane, a hypnotist, formerly wise and kind, may under the influence of some strong temptation, or other powerful incentive, begin misusing his power so as to bring the sensitive under a most baneful sway. To be the creature of another's will is to be in slavery, even though the will may be kindly and mercifully directed, and we should under no circumstances allow ourselves to be blindly led by any kind of influence.

All the good or evil that has or may come from hypnotism is due to the influence of the mind upon the body. This brings us to suggestion, that which we all use consciously or unconsciously in our daily practice. The experience of every intelligent person, medical or lay, must have led him to recognize in a greater or less degree the intimate relation subsisting in the human constitution between the mental and the physical. And it must be remembered that in a great many instances change in function and coincident alteration of a sensible character in the organization can be accomplished by an agency that is purely mental.

What so often suffuses the face abruptly, bringing the blood to it rapidly and suddenly? The emotion of a shame, a mental affection.

Severe and protracted thought will cause headache and cerebral congestion. Terror has been known to suspend the heart's action so entirely as to cause death with all the promptitude of hydrocyanic acid. The keenest appetite in the world will vanish immediately on receipt of painful intelligence. Sorrow and grief will sometimes cause relaxation of the bowels. The head has been whitened in a few hours under great distress of mind. This is stated to have happened to Marie Antoinette during her return from Varennes to Paris. The secretion of milk is very distinctly influenced by emotion. Fear and dread will arrest the flow of saliva; their action in relaxing muscular tension is well known.

Most striking derangements of the functions of the nervous system can be produced by impressions purely mental. Moral circumstances, as all experience shows, are equally potent for good. Pleasing and delightful emotions, serene and joyous impressions, will restore the drooping energy of most of the animal functions, reanimating and invigorating the whole system. Headache, nervous irritability, impaired digestion, and chronic derangement of the mucous membranes are largely under the influence of this kind of agency. The excitement of hope, indeed, with immunity from the wear and tear of harassing and habitual thought, plays a part in recovery from disease to an extent but little appreciated by most persons. These things were well known to the ancients. "Æsculapius," says Galen, "supplies us with evident proof that many severe diseases may be cured simply by impressions made upon the mind. In fact, he advised those whose bodies had been overheated by exciting passions to listen to the reading of poetry, to the singing of hymns, or to assist at the representation of a farce."

The healing temples of ancient Greece were always found in salubrious localities, and within them was practiced abundant by-play, a species of mesmerism, during a sanatory sojourn. The medicines said to have been indicated by the gods were generally harmless in themselves but beneficially operative through the imagination.

But the truly philosophical mind detects amid the humiliating phenomena developed by modern credulity an important, a material and weighty fact, that psychical influences control and modify the somatic or corporeal functions and may therefore exert a powerful action in the treatment of disease.

It is but a low estimate to form of the medical character to recognize in the physician or surgeon merely the apothecary or the cupper. It is

the office of the medical adviser to guide and direct a patient at all times and under all circumstances, in the matter of health and disease, pointing out to him when in health the way to continue so, and when sick the course whereby health may be recovered. And whatever the process which the preservation of health or the removal of sickness may involve, it is the practitioner's business to direct. This may be simply a day or two's rest in bed, or may be a tour for recreation ; a course of purgatives may be indicated, or the temporary use of a tonic. An extended or diversified social intercourse may be the requirement, or partial withdrawal from excitement of this description. It may be an engagement of the mind in some special pursuit encouraging hope or exciting pleasing anticipation. But whatever it be, if it influence health or be likely either to provoke or to alleviate disease, it comes clearly within the province of the medical man. And as long as the physician engages himself in watching his patient for the patient's own good, so long as he maintains a directing control over his course of life, he can not be justly said to have left his patient to nature.

The power of auto-suggestion can be demonstrated by citing a case by Crichton from *The Psychological Magazine*, a periodical publication of the last century, a case which shows the paralyzing influence of an expectant thought communicated as a shock.

In Kleische, a small village in Germany, a maid-servant belonging to a gentleman's family of that place was sent a short distance from home to buy some meat ; she executed her orders correctly, and as she was returning in the evening she thought she heard a great noise behind her, like the noise of many wagons. Upon turning round, she observed a little gray man, not bigger than a child, who commanded her to go along with him. She did not, however, return any answer, but continued to walk on. The little figure accompanied her, and frequently urged her to go along with him. Upon reaching the outer gate of the master's residence she was met by the coachman, who asked her where she had been, to which she returned a very distinct answer. He did not remark the little man, but she still continued to do so. As she was passing the bridge he summoned her for the last time, and upon her refusing to answer him he told her with a menacing look that she should be four days blind and dumb, and having said so he disappeared. The girl hastened to her apartment and threw herself on the bed, unable to open her eyes or pronounce a word. She appeared to understand all that was said to her, but could

not answer any questions proposed to her except by signs. Everything was tried for her recovery by the family with whom she lived, but all was in vain. She was incapable of swallowing the medicines which were ordered for her. At last, on the expiration of the fourth day, she arose in tolerably good health and narrated what happened to her.

Dr. Noble cites a case which shows the power of suggestion. A young woman in a factory placed a mouse in the bosom of one of her companions who happened to have a horror of mice. A violent convulsive fit ensued, lasting for twenty-four hours. Other cases succeeded, and in a few days so many of the girls were attacked that the factory work was suspended. A notion sprang up that the disorder had been occasioned by the opening of a bag of cotton supposed from the apparent results to have been impregnated with something deleterious. Persons at a distance even became affected who had only heard of the malady. Dr. St. Clare, of an adjoining town, was sent for, a man having to an extraordinary extent the confidence of a widely extended district about that country. Every one had an unbounded reliance upon his opinion, and the incipient epidemic was arrested by an agency analogous to that which had given it its origin, in the moral influence of Dr. St. Clare's word.

I can not bring my remarks to a close without expressing to you my deep appreciation of the honor I have in addressing you. Knowing what earnest workers some of the members have been in this field, how valuable have been their contributions to our art, I deeply realize how feeble my effort must seem. I beg, however, to assure you that I have brought this subject to your consideration rather for the purpose of eliciting your views as to whether we have good reason to believe that much can be done by this method.

COVINGTON, KY.

THE VALUE OF STATE CONTROL AND VACCINATION IN THE MANAGEMENT OF SMALLPOX.*

BY J. N. M'CORMACK, M. D., LL.D.

Secretary of the State Board of Health of Kentucky.

In order to fully appreciate the value of modern methods in preventing and restricting the spread of smallpox it is necessary for us to know something of its ravages in other ages and among other peoples, before the days of vaccination and systematic attempts at official control.

Smallpox seems to have existed from time immemorial in India, where temples were erected and the good offices of the gods invoked to protect their votaries from this pestilence; and the Brahmins also appear to have practiced inoculations against it. It was imported into China and surrounding countries in the early ages, and Galen records its prevalence in Rome A. D. 160. Marius and Gregory give an account of its invasion and ravages in all Southern Europe in the latter part of the sixth century, and Rhazes wrote his famous work concerning it A. D. 900. This writer said that although smallpox had received frequent mention in antiquity it had been inadequately described, having been confounded with measles and other eruptive diseases.

The returning crusaders are credited with having contributed greatly to the spread of smallpox over Europe. It reached England in 1241, and Northern Europe much later. It was brought to the West Indies in 1507 by the Spaniards, exterminating tribe after tribe. It was carried thence to Mexico in 1520, causing the death of three and a half millions of people. It reached Boston in 1647, and spread thence to the Indians in every direction, causing a frightful mortality. Whole races of men were wiped out by it in Brazil, which it reached about 1554, supposedly carried there by the slave trade from Africa. "It caused the death of one third of the population of Iceland in 1707, and two thirds of that of Greenland in 1734."

It is estimated that smallpox caused from 7 to 9 per cent of the total mortality in Europe during the seventeenth and eighteenth centuries, and that fifty millions of people died of it there in the century preceding the discovery of vaccination. It was a terror alike to the monarch in his palace and the peasant in his hovel. Louis XV, of France, and Queen Mary, of England, died of it, as did nobles and their

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families without number. Pepys says in his diary that the human race was beaten down with it until men became resigned to the disease. Macaulay called it the most terrible of all the ministers of death. Watson, in his classic work, speaking from the standpoint of the medical man, says: "There is no contagion so strong and sure as that of smallpox, and none that operates at so great a distance." It respected no age, sex, or condition, and the danger to life and the disfiguration of the living, especially the loss of sight, made it to a degree of which we can have no conception the most dreaded of all diseases.

Such is a brief pen-picture of smallpox in the pre-vaccination age, but the horrible details as seen, felt, and dreaded by the hopeless, helpless physicians, historians, and people of those times is beyond the conception of our minds, secured as we now are, and as we know every human being can be, by the discovery of the immortal Jenner.

Vaccination became so popular and universal in all civilized countries in the decades following its introduction that the horrors of smallpox almost faded from the memory of men, and medical writers and teachers habitually wrote and spoke of it as possessing only an historic interest. It is probable that in this age vaccination became so general that more or less inherited immunity existed as a rule, even where the individual himself had not been subjected to the operation. Then came the reaction against it, and an exaggeration and misrepresentation of the accidents and evils incident to any like remedy used by the laity, as well as by many careless medical men, who had no conception of the value of cleanliness, which philosophical minds should have anticipated. In this the anti-vaccinationist had his day alongside of him who doubted if Shakespeare wrote his own plays and the other countless freaks, literary and vulgar, and whose only hope of notoriety has been the claim, usually a pretense, that he was an iconoclast.

The present epidemic in this country began from cases brought from Honduras to Mobile in the spring of 1897. The early cases were overlooked or neglected, owing largely to the mildness of the disease, which has been characteristic of the entire epidemic. This is probably due in part to the attenuation of the contagium by long prevalence in the tropics, and possibly to some extent to the partial racial immunity before referred to, inherited from generations of vaccinated ancestry, especially in the colored race from the rigid enforcement of vaccination during slavery, and the children of parents recently from Europe. Another reason that caused it to be overlooked was that it was confined strictly to the colored

race at the outset. The disease soon reached the mining regions of Alabama and Tennessee, where it rapidly assumed the proportions of an epidemic.

The first Kentucky case came to Middlesborough from Tennessee early in December of that year, and was not recognized as smallpox until many exposures had occurred and a serious epidemic was in full blast. A little later the disease broke out at Jellico, a State line mining town, and two months later a negro who had contracted the disease at Knoxville came down with it at Richmond. Before a diagnosis was made and the case reported to the health authorities another serious epidemic was in full sway. Although the features of these early cases were well marked, and the true nature of the disease was appreciated by the better class of the profession as a rule, ignorant and designing persons spread the report that it was "elephant itch," "Cuban itch," or "African itch," all of which are smallpox in the negro vernacular, names which have persistently clung to the disease in this and other States, much to the confusion of the popular mind. By the rigid application of the usual methods, isolation and enforced vaccination, the disease was stamped out in all of these places, but in a few weeks was imported into other counties and stamped out, and we have moved on in this endless circle in Kentucky for now more than four years. Had the methods of other States been as effective as ours we would never have had smallpox to begin with, or at the worst our trouble would have ended with the eradication of the disease at the places first mentioned. On the other hand, had all our people been vaccinated at the outset, as the law plainly required, we would never have had a case unless an imported one, followed by no spread of the disease.

Our official figures show, however, greatly to the discredit of the State as well as to the medical profession, in my opinion, that only about 15 per cent of our population was protected by vaccination when the epidemic began, and this chiefly in the cities and towns. In the country districts practically all were unvaccinated, and if the first case was not recognized and isolated an epidemic was the inevitable result. If the first case was a negro he spread it among his own people as a rule, and if a white person he gave it to his friends and color, but if its extension was not soon restricted by official action it spared neither race. In the light of an experience with thousands of cases coming under my observation it has shown no preference for the negro race in this climate.

It is doubtful if better opportunity has ever offered for fully and fairly testing the value of official control, in which vaccination is included, in the management of smallpox than during the almost constant prevalence of the disease in some portions of this State in the last four years, or if the history of so many separate outbreaks in country districts has ever been more carefully observed or more faithfully recorded and reported. In that time there have been four hundred and five distinct outbreaks in one hundred and twelve of our one hundred and nineteen counties, with a total of eleven thousand seven hundred cases, and one hundred and ninety-one deaths. In probably a majority of these instances the initial case was an importation from some other State, and often, especially in the country districts, many cases or exposures had occurred before the character of the disease was recognized or the local board of health had any knowledge of the facts. This was due partly to the mildness of and low rate of mortality from the disease, and still more to the fact that we had been so long exempt from smallpox in this country that a generation of doctors had come on who had little theoretical and no practical knowledge of it. As we have efficient boards in nearly every county and municipality in Kentucky, active measures were adopted to bring the disease under control as soon as it was reported, and these efforts were uniformly successful in the end, although, especially in the earlier years, the work was often hampered and the difficulties greatly increased by ignorant fiscal officials, who refused or delayed the appropriations necessary for feeding, housing, and nursing the indigent sick, and using this pretense of economy as a vote-catching device for re-election to the office then held or some higher one. This tendency was nipped in the bud by the prompt and unsparing exercise of the power of the State Board of Health to put the town or county in rigid quarantine until such time as proper action was taken by the officials to protect their own people and the balance of the State. To accomplish this seldom required more than two or three days, and soon the intimation that it would be done was all that was necessary.

The literature of smallpox, as contained in the text-books, is largely based upon observations made in cities, camps, prisons, and other crowded conditions, where the opportunities for contagion were so abundant as to constantly render confusion possible as to the results. In our epidemic a large per cent of the outbreaks occurred in more or less sparsely settled country districts, where each case could usually be traced to its origin and date of exposure, thus affording special chances for studying the natural

history of the disease. As a result of these observations the writer has arrived at some conclusions which, if true and utilized, are of the utmost importance to health officers and physicians in the practical management of smallpox. One of these is that the disease is slightly if at all contagious until the beginning of the pustular stage, which sets in nearly always about the close of the fifth day of the eruption. If a patient with smallpox can be taken from the house, or the other inmates removed, by this time the danger to such persons is scarcely worth considering. If the other members of the family can be thoroughly vaccinated at enough points to make the result certain within forty-eight hours after the beginning of the pustular stage of the first case they will be almost certainly saved an attack. If seen after later exposure than this it is safer to practice inoculation, which I have frequently done, although it is in violation of an almost obsolete statute. I have taken children from the bed, and even from the breast of a mother with confluent smallpox, up to the sixth day of the eruption, over and over again, and saved them from the disease. In this connection I would like to insist that no person should ever be quarantined in a house with smallpox patients unless they have been previously vaccinated with fresh virus at not less than three places. A violation of this plain and humane rule is the most frequent fault in the management of our physicians and officials, in both town and country districts.

A few words in regard to vaccination and the selection of vaccine virus will conclude this paper. Less would be said upon this branch of the subject if the writer was not convinced that physicians are responsible for many of the lax notions and much of the carelessness which obtains in regard to the importance of universal vaccination. The family physician has it in his power to enlighten nearly every person in this country upon this subject, and he alone can do it in a way that will be heeded.

I would urge that vaccination is the most important operation that most people ever have done, and that if imperfectly done it can only give rise to a false sense of security. If properly done, it is usually a perfect protection against smallpox for a lifetime, and is devoid of danger. Varioloid occurs in persons only partly protected by vaccination. The operation should always be done by a competent physician, with strict aseptic precautions, and the person should be seen from time to time until it can be known that a perfect result has been secured. The virus should be introduced in not less than three points on the arm, about an inch and a half apart; only the scarf skin should be scraped off, without

drawing blood, and the surfaces should be allowed to dry thoroughly before the sleeve is put down. Protectors and dressings are unnecessary if the abraded surfaces are dried well, and in my experience do more harm than good. Directions should always be given to avoid injuring the parts, especially in changing the underclothing, and that the arm should be kept clean. If multiple vaccination is practiced and three or more good marks are secured, a second vaccination is seldom successful to any degree in after life, and I have never seen a patient so vaccinated have smallpox in any form in all my experience. The reason that vaccination runs out is that it was never thoroughly run in; that is, the patient was only partially vaccinated to begin with. If the first effort at vaccination is incomplete it is difficult to secure a perfect result by later attempts.

After careful observation and a large experience I am convinced that the profession should return to the use of humanized virus so far as it is possible to do so. This form of virus "takes" more certainly, produces less local and constitutional disturbance, and appears to give longer and better protection against smallpox. If the virus is obtained from healthy persons, known to the physician, no better source for it can be conceived. The propaganda for bovine virus has always been largely a commercial one, and the sore arms and severe constitutional disturbance following its use is responsible for much of the growing prejudice against vaccination. Owing to its hygroscopic properties, and the consequent difficulty in drying the surface to which it is applied, if for no other reason, glycerinated virus is more objectionable than the dry points; but to my mind the time has come to abandon the use of the bovine virus except in the emergency of an epidemic, or in starting a fresh stock of the humanized virus.

In conclusion, permit me to say that in this day smallpox is a serious reflection upon the intelligence of any individual or community having it. Systematically enforced vaccination has protected every nation, army, or community which has resorted to it. It is at least within the reach of every individual in this country who has arrived at the age of discretion. Smallpox is the easiest of all the contagious diseases to stamp out, even when it has gained a foothold. Prompt isolation of those affected, preferably always in a hospital, and the compulsory vaccination and surveillance of the exposed, has never yet failed to bring an outbreak under quick control.

These measures appear simple enough on paper, but their effective enforcement among negroes and the class of whites who neglect vaccination and have a monopoly of smallpox will fully test the tact, patience, and firmness of the most experienced health officer. If these precautions could be rigidly enforced in the other States of the Union for six weeks we would have no smallpox. If successive generations were systematically vaccinated this loathsome disease would soon be no more known among men.

BOWLING GREEN, KY.

THE INFLUENCE OF CONTAMINATED WATER IN THE DEVELOPMENT OF DISEASES.*

BY D. G. SIMMONS, M. D.

For quite a number of years my attention has been directed to the relation between the drinking of impure water and the existence of more than the average amount of sickness in those who drank it, as well as to the greater violence and malignancy of such sickness frequently. My professional work lies in South Central Kentucky, in which the drinking water is obtained almost exclusively from wells and springs, with a sprinkling of cisterns. A glance would frequently show that these springs and wells were almost as filthy as hog wallows; and it was observed that the more filthy they were the more sickness was seen among those who drank the water. This coincidence was so constantly seen that I was forced to the conclusion that they sustained the relation of cause and effect.

In adducing evidence to support this conclusion I will show: First, how drinking water may and frequently does become contaminated, and second, I will endeavor to establish the fact of the coincidence between the drinking of such water and the almost constant existence of more or less sickness, and the further fact that in almost all the cases of typhoid fever and other diseases which put on a typhoid state of system the victims were using at the time, or very shortly before the time, polluted water, whether from springs, wells, cisterns, or hydrants.

How the Water Becomes Contaminated. Sometimes the reservoir which supplies the stream to wells and springs is polluted by being

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partly fed from sink-holes and contiguous stock-ponds, into which all manner of filth is washed from the surrounding surface which drains itself into them, as I have been able to verify positively in several instances, one of which I will cite just here for illustration.

Out of a family of five, four were simultaneously attacked with a malignant form of pneumonia, two of whom died, and the others, together with a nurse who was stricken down, recovered after a prolonged convalescence. On the following summer there were at the same place two violent and prolonged cases of typhoid fever, one of whom died. The water used by this family was from a bored well which tapped a large subterranean stream. One half mile above this well was a large swag, into which all the water and filth from a small village and a large water-shed were emptied. After prolonged rains this filthy water in the swag would be several feet in depth until it passed off gradually through a sink-hole. Whenever the muddy water would accumulate in the swag the water from the well in question would become muddy, and occasionally seeds, etc., which were known to be produced in the swag above mentioned would be pumped up from the well. After the water in the swag had all disappeared through the sink-hole the well water would again become clear.

The conclusion seems inevitable that the filthy water of the swag escaped by way of the subterranean stream which was tapped by the bored well, and it seems reasonable to infer that this contaminated water and the deadly sickness stood in the relation of cause and effect, since there was no epidemic prevailing and the surrounding neighborhood was in usual health. The place is still known as a notoriously sickly place.

In other instances I have reason to suspect that the reservoir supplying certain springs was contaminated by the water feeding it percolating through contiguous grave-yards. The families who used water from two such suspected springs which I recall, which springs were situated at the foot of hills on the summit of which were situated country grave-yards, were unusually sickly—in fact, they were never quite well, and this feature was and is yet observed at those places with each family of tenants, as they change from year to year.

Another source of pollution of water is that during rainy spells the earth contiguous to and surrounding the well walls becomes saturated with water (by reason of the substratum being more or less impervious to water) and with filth carried from the surface by the water; all this

gradually oozes into the well, constituting what are known as seep wells, and this filthy seepage frequently fills the wells up to the surface of the ground. As wells are usually situated in back yards or horse lots, there is ample opportunity for the accumulation of filth around them and its solution and absorption in the ground.

But by far the most frequent source of pollution of drinking water in the country is from surface washings into the basins of wells and springs. The walls of the wells are but rarely built above the surface of the ground so that clay may be packed around, forming a cement to prevent surface drainage into them, as they should be, but instead of this the walls are stopped on a level or a little below the level of the surface of the ground, thus favoring the flowing of rain-water, loaded with filth, over the wells walls to settle in the basin and mix with every bucket of water that is drawn up. These wells are most usually dug in flat places or in depressions on the side of hills, under the impression that water may be found nearer the surface. Of course, when it rains there is nothing to keep the filth from flowing into the wells. The water from such wells is always muddy during and after rains, which is positive proof of the surface washing into them.

Springs are always found on the side or at the foot of hills, and their basins are most usually found half filled with rotting leaves, putrefying frogs, and any other filth that washes into them with each rain. The wells and springs are rarely cleaned out until the sediment fills up the basins too much for the bucket to sink, or until the water becomes so offensive to smell and taste that it can not be longer used.

In addition to the above sources for the contamination of drinking water may be mentioned river water as used from hydrants in cities. Although I can not speak from my own observation of the effects of drinking water in cities, I have while investigating this matter received a large number of letters from prominent physicians in the cities of Louisville, Nashville, Bowling Green, Owensboro, Paducah, etc., and it seems to be the consensus of opinion of those who have given special thought to the subject that their cases of typhoid fever are produced by drinking-water contaminated either from badly kept cisterns or wells in the outskirts of the city or by river water from their hydrants contaminated by sewage from cities above, or other sources of putrefying matters flowing down the river.

There is still another source of contamination among those who are careless and not over-cleanly. I allude to the use of open water-cans,

into which dust and other matters are constantly settling, and which are not kept properly scoured. It is not infrequently the case that slime is found in the bottoms of water-cans thick enough to write one's name in. This source of pollution is more prevalent, I am persuaded, than is usually realized.

Springs and Wells Not Always Contaminated. It is not intended to be implied that the water from every well and spring is always and necessarily polluted, but the exceptions are so few that the rule may be considered almost universal. If spring and well water is not defiled at its source, as above described, and the well walls are built up above the ground surface and properly leveled up and covered securely against the entrance of contaminating agencies, and in the case of springs if the water is carried off through a trough, constituting a spout spring, thus displacing the basin, the water may be pure and wholesome. While this condition of springs and wells may prevail, and the water may be wholesome, as a matter of fact it very rarely does prevail, and the chances are so many against its wholesomeness that it would be infinitely better if the use of spring and well water were entirely abolished, if it were possible.

Neither is it to be inferred that every one who uses polluted water will necessarily thereby fall a victim to diseases. Fortunately a good constitution and healthful habits of life may keep the eliminating organs so active that a sufficiency of disease germs fail to find permanent lodgment to generate disease. But if, from any cause, the vital health-maintaining powers should be impaired, and the habits of life are unfavorable to health, then the habitual users of such unwholesome water fall easy victims to diseases. Not only are persons habitually using polluted water more liable to protracted diseases assuming an adynamic form, but they are also more amenable to malarious and other morbid influences, presumably on account of a lowered vitality and impaired resistive forces.

Coincidence of Increased Frequency of Sickness in Persons Drinking Polluted Water. So uniformly is it the case that typhoid fever—or the protracted fever which we call typhoid fever for the want of a better name—is found associated with the use of contaminated water that all those who have given the subject special thought have concluded that it is the sole cause of its first development in a given family, after which the septic germs may find access into the systems of others by personal contact and negligent handling.

A case which at first sight seemed not to fall under this category of causes came under observation while this paper was being prepared. The patient was a boy of fifteen years of age, who had a protracted form of fever of a very malignant and asthenic type. Upon inquiry as to the water he had been using it was found that the family used cistern water caught from a metal roof, and unusual pains had been observed to keep the water pure by thorough filtration and cleaning the cistern once a year. Upon further inquiry, however, it was developed that he had been attending school up to the time he was taken sick, and the school children used water from a large spring formed by one of the points of emergence of a rising and sinking creek, a veritable sewer of pollution.

By way of further illustrating the baneful influence of polluted water in the development of disease, I may quote from a paper I had the honor of reading before the Southern Kentucky Medical Association at Glasgow, in April, 1900, on the subject of "Water as a Therapeutic Agent":

"As a prophylactic against sickness, the purity of water should be rigidly looked after by the doctor himself, especially if several members of a family are sick at the same time. I can better illustrate this by citing two incidents coming under my own observation. Last winter I was called to a family of nine persons, six of whom were down with a virulent form of pneumonia. An investigation showed that the washings from the stable and cow lot flowed directly into the well, there being no curbing to it. I saw another family of eight persons last summer, six of whom were down with typhoid fever. The family were using water from a well which had never been walled up, was supplied by percolation from a muddy stream near by, and as the well was situated on a hillside it became the receptacle of surface washings, sticks, dead rabbits, etc., and a lot of these were fished out before me. Strange as it may appear, neither family, although of average intelligence, had ever suspected impurity of the water, or connected its use with their sickness. In my part of Kentucky we have creeks which sink and run under shelving and pot-leg rocks, and rise again every two or three miles. All the points of emergence are regarded as large springs, and are used as such. These creeks are veritable sewers for all the filth which is produced over the entire water-shed which they drain—stables, privy-closets, carrion, and all forms of putrefaction. Such neighborhoods are notorious for the quantity and virulence of sickness which is seen every year, and are always favorite spots for epidemics to get in their deadliest work."

In order to determine the question whether my observations of the effects of impure water corresponded with those of others, I sent out a

circular letter to a large number of practical, clear-sighted physicians, in both city and country districts, making inquiry as to the proportion of their cases of typhoid fever, typhoid-pneumonia, etc., who used cistern water exclusively and those who used spring or well water. The replies were tabulated and the proportions footed up as follows : Those drinking cistern water, 7 per cent ; those drinking spring or well water, 93 per cent.

Four fifths of the replies claimed they had no typhoid cases at all with cistern water drinkers, and nearly all of those who observed some such cases stated that the cisterns were in bad condition. It is obvious to every observer that cisterns are sometimes very carelessly kept—either have no covering at all or illy fitting covers allowing frogs, rats, bugs, etc., to fall in and defile the purity of the water. Of course the water from such cisterns may be as great a menace to health as that from springs or wells. I have known persons to fish out the putrefying mass and sprinkle table salt and lime into the water, and if it was not offensive to the point of nausea continue to drink it.

Thus I take it that the proportion of typhoid cases seen with cistern water drinking patients about coincides with the number of contaminated cisterns. So it would seem that it is contaminated water which develops diseases of low form, whether obtained from springs, wells, cisterns, or hydrants.

It is now, I believe, almost universally conceded that typhoid fever is produced by contaminated water, but I assume that is not the full extent of its baneful influence. By impairing the functioning power of the eliminating organs, thus resulting in an accumulation of toxins, which in turn lowers the resisting power to the encroachment of disease, the habitual drinkers of such water fall more easy victims to any morbid influence to which they may be exposed, the given disease developed seeming to depend upon environment, the season of the year, heredity, the epidemic which happens to be prevailing at the time, predisposition of the patient, etc.

At those sickly homes supplied with filthy water, in addition to frequently seeing typhoid fever we much more frequently see an unusual tendency to chills, to disturbances of the bowels, to colds, coughs, and pneumonias. Such disturbances at such places give way reluctantly, the cause remaining constantly opposing any reparative measures.

The precise forms and varieties of germs producing these different manifestations is a matter I will not discuss. I will leave that to the bacteriologist, and only record my observations along the line of results.

If the morbid influences of contaminated water were limited to the development of typhoid fever alone, and by the general use of wholesome water this one scourge could be abolished, there would be a saving of life and labor compared to which the influence of vaccination, quarantine, etc., would fall into utter insignificance. But in an economic view, the disability from labor brought about by typhoid fever is itself insignificant compared to that produced by the great number of minor ailments as a product of contaminated water.

It has been pretty clearly shown, I think, that the water from the great majority of springs, wells, and hydrants is more or less contaminated, either at the fountain-head or from surface drainage or seepage. Possibly contamination by surface drainage might be obviated in the process of time by a constant crusade against it kept up indefinitely, but how could we provide against contamination at the fountain-head, from sink-holes, and the pollution from seepage through the walls? That would seem to be irremediable. Again, since rivers are said to go greatly out of their way to run by great cities, how is it possible to provide against contamination furnished to each city by the sewage from all those cities above it, except by a complicated system of filtration, too costly to be within the reach of any but the largest and wealthiest cities? Indeed, so attenuated are these disease germs, it is an open question whether the typhoid and other disease-producing germs can be removed from the water by filtration. Since polluted water is the cause not only of typhoid fever but also of a large proportion of all other diseases, and since it aggravates and complicates diseases produced from all other causes, and since it is universally conceded that cistern water, when the cisterns are kept properly cleaned out and secured at the top from entrance of contaminating agencies, is by all odds the most wholesome water in use, why use any other kind, since that water is accessible to all?

In all the States of the Union except possibly those of the Rocky Mountain range there is sufficient rainfall in the winter months to fill the cisterns, and as cisterns are not expensive it would seem that we have within the reach of even the humblest citizen a form of water absolutely wholesome and free from all disease-producing germs. In the realm of prophylaxis against disease I know of no one thing so potent, and with a universal effort on the part of the medical profession in the accomplishment of this reform it is entirely within the scope of possibility. The best way to reach the people is through the secular press. The daily and weekly papers would readily take it up and urge it in every

family, and it would be only a short time before its fruits would be manifest to all.

A significant letter recently received from the Secretary of the Health Board of New Orleans, where the drinking water is almost exclusively cistern or distilled water, informs me that there is almost no typhoid fever in that city except the cases that drift in from the "ground water districts" of the country, as he expressively terms it.

ADAIRVILLE, KY.

THE MAMMARY GLAND: A PLEA IN EQUITY.*

BY C. C. LEWIS, M. D.

Heated competition and vigorous investigation in both surgery and medicine has left no ground uncultivated or region unoccupied. The mammary gland is listed. In medicine there was a day when it occupied a position of enviable dignity and was the subject of great comment and concern.

In the days prior to the time when asepsis offered universal salvation—in the dark days of poultices, lancets, sarsaparilla, and iodide of potash—it could command all the attention needed; there was expressed great regret when its dignity was lowered, and sympathy when it suffered remorse by the infiltration of strumous and other influences. There were doctors then who acquired more than a local reputation in its care, that it might be made to fulfill its office. They craped themselves when they failed in their undertaking. They brought with them discreet women as being the ones to be trusted with the midnight vigil of this precious organ. There was a prevailing sentiment of "God Save the Queen."

A quarter of a century—yes, even a decade—finds these men quite changed. They will disgorge themselves of such expressions as "No use troubling a woman by having her nurse a baby—let her feed it upon any good brand of food from the laboratory. Nursing will greatly fatigue the mother; she is not a strong woman; she is fond of society, and society needs her. The baby will get along all right—really it's the best way to raise them. They avoid the toxic influences of the mother's milk after the late hours of a society function." What a criticism of a mother, without a point in score for lamented babyhood!

*Read before the Kentucky State Medical Society, Paducah, Ky., May 7-9, 1902.

I am not fighting centralized capital or condemning any brand of milk: I am simply for justice and the old-fashioned way, and when I recognize every day of my life a combination between doctor, society, and the unsympathizing man of commerce, I know it jeopardizes the interest of the baby and the lying-in woman. I know artificial food will serve the purpose—that justifies the answer—that is all we claim for it. The trouble is we do not disclaim enough. If the doctor consents there is nothing available upon which there is not an immediate option. We do this too often, and without cause—we are drifting. The habit grows as the avenues to success in medicine close, and the consent of to-day was the prompt rejection of yesterday.

A great many good men, under pressure of the day, advise a woman to raise her baby on artificial food when he knows there is no reason for the adoption of so rash an act. A few deflections, and we are ready and willing to mark time to the tramp, tramp, of the masses who claim the right of way.

Converts to the habit of infant feeding are easy to obtain. There is always a woman upon every square—a hustling woman, who is a genuine, well-equipped evangelist in the field of artificial food. She can describe minutely how Chapin recommended the use of Cerio as the dextrinizing agent, claiming that the cellulose or skeleton of the cell acts as the most effective attenuant of the curd. She has the formula mathematically accurate, and can save the mother great trouble in calling at the milk laboratory as the age of the child changes. She is the lobbyist with whom the doctor, the nurse, and the lying-in woman meet, and she frequently keeps the doctor from that chagrin incident to a minority report. She remembers exactly how this woman, on a former occasion, suffered disaster by the loss of a nipple in a conflict between fissures and nipple, and knows that it would be an unpardonable punishment to attempt the second time to nurse a baby; the doctor could not be so cruel.

This character is decidedly ubiquitous—is found in both the rural and city districts, and I am sorry to say good men lose their better judgment and consent to the raising of babies on artificial food when pressure is brought to bear on them.

The profession is crowded—men clamor for recognition, and old men must do as hustling young men or suffer the accusation of being out of date. No woman wants to nurse a baby if her doctor says no. She is perfectly willing to circumvent the unpleasant duty, and padded and painted statistics in the hands of him who seeks admission and recog-

dition in a good family is of easy avail. You can not walk while your competitor exhibits such bursts of speed, yet you know of the troubles the heated months of summer will bring in the crowded wards and apartment houses.

The influences to consent upon the part of the doctor are numerous. He becomes a convert gradually, like fabulous stories told until they are clothed in the semblance of truth. Society regards the process of nursing a baby as vulgar, and the condemnation is contagious. Humanity suffers, while nature tolerates the insult.

I am not condemning emergencies, but discussing expediencies. I am more than willing to use artificial food when the case demands it, but the sin consists in giving consent for a trivial reason and being party to a crime which I know is on the increase.

I have the most profound respect for the chemist who demonstrates to me that this combination contains that which approaches nearest to the ultimate and constructive elements of the human body. It is the indiscriminate use of his combination to which I object, and we are the tutors in public sentiment, having a duty to perform with conviction and honest purpose.

Medical literature has grown along the line of infant feeding to almost a condition of obesity. Pediatrics is given over to this as its star act. It is as a mastoid to the aurist or an appendicitis to the surgeon. He who does not write of infant feeding is not loyal, and the hustling man of commerce will see to it that mothers have all the aid that photography can afford in furnishing them with the reproduction of the faces of babies raised on artificial food; and the druggist, "thanks be it the best friend that the doctor has," will place them in a prominent location.

I hope I am not misunderstood. I know that the profession of medicine is calculated to make one grow fretful of his lot. This may be the reason that those whom we term "old liners" venture to indulge the hope that society would have been content to do without the matron, at least during the busy scenes of gestation.

I may be in a poor position to receive sympathy or support. The throng which follows the urgent demands of hustling commercial life is on the increase. The pace is too fast to fortify placid justice, which should control and measure the steps of honest medicine, and a fretful clientele is always ready to circumvent that which requires precious time or thoughtful vigilance. I am not making an uncompromising accusation

that the entire profession is committing an unpardonable sin—simply expressing a fear that the sin is on the increase. Knowing how well our competitors take an inventory of our happenings in daily work, I feel that we are all competent judges and are in a position to know. I have a knowledge of this and so have you, and the truth of my assumption is the subject of your honest verdict, and calls for a combined effort to check the unwise practice upon the part of healthy women to attempt to raise healthy babies away from the support of a healthy breast.

I can but feel that we are making mistakes—that we are culpable—but have no right to occupy your valuable time to discuss the matter at length. I simply express my regret that a gland which is the culmination of such anatomical beauty and excellence, and which is nature's purest legacy, should be the subject of such willful neglect, and express an earnest hope that intelligent, honest doctors will linger to practice medicine in accordance with methods which will yield the greatest returns to over-credulous humanity.

OWENSBORO, KY.

A FEW SCATTERING THOUGHTS.*

BY T. ATCHISON FRAZER.

The title of my paper does not indicate anything, yet it indicates most anything we may desire; it is rather impromptu, as I have had only six months for its preparation; it is liable to partially cover the field of medical science from the time of Hippocrates down to this good hour, and yet it is liable to scarcely touch either science or medicine for that matter; it will be mostly original, as I have not read more than one hundred volumes during its preparation, and I am satisfied you will think either the title fits the paper or the paper fits the title.

There is no branch of our science that is more important to the general practitioner, and of yet more importance to the poor victim upon whom we are practicing, than diagnosis. It matters not how perfect our understanding of therapeutics, how skillfully we write our prescriptions, or how wise we look when we give the sorrowing loved ones our prognosis, favorable or unfavorable, if we have not yet made a correct diagnosis our opinion is worth but very little; and we should never be content until a diagnosis is made, for we have no right to an

*Read before the Ohio Valley Medical Association, Owensboro, Ky., May, 1902.

opinion unless that opinion is based upon facts; and a careful study of physical diagnosis will always pay us tenfold for our labor. Physical diagnosis studied by the bedside, studied while walking the streets, studied while in our office, and studied everywhere else, will always be useful to us.

Hippocrates gives us a nice example of physical diagnosis in his description of mumps, when he says "the disease is characterized by swelling of the glands at the angle of the jaw, and often, after exposure, the swelling retires to the testicles."

In order that we may make a careful examination of our patients we should know a few things about anatomy; we should remember that the spleen is in the left side and appendix in the right, and not make the mistake I once knew a doctor make in diagnosing appendicitis in the left side of the belly. We should also know whether or not a woman is pregnant before we curette the uterus, for if she is pregnant we might produce an abortion. When we are called to attend a woman in confinement we should know the presentation and the approximate diameter of the pelvis before we assure the good old women present that "everything is all right." We should never feel that we have done our duty until we have exhausted every means at our command to arrive at a correct conclusion. We should ever bear in mind that the history of many of our patients is only half told, and that that half is not always reliable. We should never be content after we have only counted the pulse and looked at the tongue, for the laity might suspect something and we might lower the dignity of our honorable profession. After any disease is diagnosed we should endeavor to make a reasonably correct prognosis, for the laity will often measure our skill by the accuracy of our prognosis; and many busy-bodies will delight in informing their neighbors that the doctor did not know, but if they had had Dr. A "he would have known as soon as he saw the patient."

Therapeutic measures should be applied with as much accuracy as possible, for after we have diagnosticated and prognosticated the patient we must begin to apply our therapeutic skill. First, we must select the remedies that are indicated in each particular case. We must study the indications and contraindications, also idiosyncrasies, and apply our therapeutic measures with all the accuracy possible; and before we prescribe a drug we should have a clear and concise idea of what to expect of each special drug. We must see that the dose is

correct; we must know that the nurse understands the directions properly, and we must impress upon the nurse the necessity of a strict compliance with our orders; and we must by our deportment impress all interested in the patient that we are masters of the situation. When our patients are in the most critical stages of disease we must be vigilant, and assert our authority in the most positive way possible. The more critical the condition of the patient, the more meddlesome the laity; the more suggestions they will make, and the more liable the family will be to do their bidding, and the more the physician's patience will be tried and his mind taxed.

Emergencies arise in every physician's practice, and no part of our memory is more vivid than that of emergency practice; times when our very souls are tried and our medical skill is taxed to its utmost; when a few moments mean the loss of a valuable life; when our patient is about to die from collapse, or about to bleed to death from a severed artery, or about to die from asthenia or post-partum hemorrhage, then it is that we must gather up all our reserve fund of knowledge and like valiant soldiers loosen the hold of the enemy on our patient. When the emergency has arisen we should use heroic remedies. When our patient is about to die of asthenia, we should not hesitate to give one-fifteenth grain of strychnia and one-fiftieth grain of nitro-glycerine. We should not fail to repeat them in thirty minutes if we do not get the effect we desire; and oftentimes we will tide our patient over the crisis when otherwise we would have had a funeral.

When an artery is severed we should not hesitate to throw a ligature around it and stop the bleeding. When we are confronted by post-partum hemorrhage we should not fail to act, and act promptly, for a moment's delay often means the loss of a valuable life. We should not fail to keep a record of all the births and deaths that occur in our practice, and make a report of same to the county court clerk on or before the 10th day of January in each year; for, if you do not, you are liable to indictment and the penalty of the law. Do not fail to collect every bill you can; and when you make a collection, be certain that the proper credit is entered on your books, for I meet many men that some cruel doctor has made pay his bill twice. But the trouble with us is in collecting our bills once. We should look diligently after the financial side of our professional life and endeavor to lay away something for a "rainy day."

How often do we see a physician who has worn his life away battling with disease, comforting the dying, consoling the bereaved, and ministering to the widow and orphan, and has reached the evening of his life without common comforts in his declining years!

We should always strive to bind the profession together by stronger ties, and we should endeavor to make all medical men one common brotherhood. We should avoid private piques and petty jealousies, and we should despise anything that tends to mar the unity of the profession.

Now, as I am about to close this paper, I am sure that the Association agrees with the assertion I made at the beginning, that the subject fits the paper and the paper fits the subject—if we were to apply a musician's term we would call it a medley.

MARION, KY.

ERRORS OF DIAGNOSIS OF CONTINUED FEVERS.*

BY HORACE T. RIVERS, M. D.

There is not a subject in the whole field of medicine that has been discussed more regularly in medical societies than that of continued fevers and their treatment. It is not my purpose to deal with this phase of the subject, as there have been so many able opinions advanced and defined by very competent men that to review them in a paper of this character would be impracticable. I will confine my remarks to what I conceive to be the errors in diagnosis which we are liable to make in the atypical cases which we usually encounter in this decidedly malarial district.

Every physician present has seen cases like the following: May or may not have had an initial malarial paroxysm, with general malaise and slight afternoon rise of temperature, constipation, anorexia, and nausea; on examination you find large, flabby, heavily coated tongue, indented by the teeth; skin sallow; breath offensive; liver and spleen slightly enlarged and tender to pressure; perhaps some tympanites or gurgling in right iliac fossa, temperature one, two, or three degrees above normal. These cases have been variously called typhoid, typho-malarial, continued, and slow fevers.

Actuated by a desire to know the true diagnosis, last fall and winter I secured the blood and urine of thirty cases from the practice of several

* Read before the Kentucky State Medical Society. Paducah, Ky., May 7-9, 1902.

physicians of Paducah and surrounding country, which were turned over to Dr. M. M. Cooley, who made the examinations for malaria and the Widall reaction of the blood; also the Diazo reaction of the urine. These specimens were from cases in all stages of the disease, and consequently the examinations for the malarial parasite were not as satisfactory as we could wish, as in the majority of the cases the patient had received heroic antimalarial treatment for some time before the specimen of blood was secured. The results of the examinations are as follows: Decided evidence of malaria was found in cases one, five, six, seven, and ten. The fever in these cases continued for eight, eight, thirteen, five, and sixteen days respectively. The Widall reaction of the blood in these cases gave negative results, as did the Diazo reaction of the urine. In none of the remaining twenty-five was the examination for malaria positive enough to cause us to think that the very few parasites present could be a factor in the disease, and especially so since in no instance did we find the æstivo-autumnal form, which is supposed to be the special one that causes the continued fevers. In this last class the Widall reaction of the blood was positive on the first trial in twenty instances; of the remaining, four were positive on the second and one on the third trial. The stage of the fever during which these specimens were secured was from the fourth to the thirty-fifth day. The results of the reaction became positive enough to recognize in from ten to forty minutes. In a majority of the cases the clumping would begin in fifteen minutes, especially if the blood was from a case during or after the second week. The Diazo reaction of the urine was positive in every case in which the Widall reaction of the blood gave positive results. In two instances in which the Widall reaction of the blood was negative on the first trial the Diazo gave positive reaction. In cases twelve, thirteen, fourteen, fifteen, sixteen, nine, three, two, and nineteen, during the course of the disease there developed all the symptoms that we would expect to find in a typical case of typhoid fever. Of the remaining sixteen cases a few developed some of the symptoms, but in not a case were the typhoid symptoms of enough prominence to warrant a positive diagnosis of typhoid fever—that is, if we are to accept as gospel what we have been taught by medical authorities on the subject.

My conclusions are: First, that we often have typical cases of typhoid fever which are readily diagnosed as such. Second, that much more frequently they are atypical cases masked by malarial poisoning, and as such we have failed to properly diagnose them, but still typhoid fever just

as much as the typical case which presents every symptom with such prominence that the most veritable tyro might not mistake. If these cases which give a positive Widall reaction of the blood are not typhoid, what are they? It is claimed, and I believe truly, that the Widall reaction will not occur in any other disease. We can not believe that it would be a logical conclusion to attribute to the malarial parasite the property of generating a toxine which would possess the power to paralyze a pure, fresh culture of the typhoid bacillus in from fifteen to forty minutes, and as we can not suspect any other complicating factor we believe that the only logical conclusion at which we can arrive is to regard all cases of fevers which continue to have fever for a period longer than one week after the thorough saturation with quinine as typhoid. We are cognizant of the fact that the Diazo reaction is not a diagnostic factor which can be relied upon with as much confidence as the Widall, from the fact that the Diazo may occur in several diseases that might under some circumstances be mistaken for typhoid fever; still, if the Diazo gives positive results after the Widall has shown positive, we can not be far off the right track in saying typhoid fever and sticking to it.

We recognize the fact that a series of only thirty cases, however positive, can not settle a disputed point in diagnosis on such a time-honored subject, and our hope must be that some one better fitted will take up this work and carry it to a successful end.

In conclusion, I wish to thank Dr. M. M. Cooley for the microscopical work which made this paper possible.

PADUCAH, KY.

COLD CREAM.—This common unguent is composed (St. Louis Medical Review) of five parts of sweet almond oil and one part each of white wax and spermaceti. Melt over a gentle fire until the wax is dissolved, stir until it becomes the consistency of cream, and then add slowly one pint of hot saturated solution of borax; continue to stir until the cream becomes stiff.—*Denver Medical Times.*

HAND STERILIZATION.—Simon Marx (Medical Critic) in obstetric work depends almost entirely on successive scrubbing with: 1, green soap and water with a sterile brush; 2, scrubbing with a 65 per cent solution of alcohol; 3, scrubbing and soaking the hands and arms in a 1:1000 solution of bichloride of mercury, and then thorough rinsing with a sterile salt solution.—*Ibid.*

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TYPHOID FEVER AND POLLUTED WATER.

The great increase of typhoid fever in our city recalls the necessity of closing the wells and placing water plugs in their stead. It is utterly impossible to prevent well water in Louisville from becoming contaminated, owing to the peculiar soil, which is sandy, and which permits all surface water to percolate down to a certain strata, where the pump water is obtained. Not only does the surface water find its way into the wells, but that from many of the sewers, which are not sufficiently tight to confine the water passing through them, and that from the thousands of vaults and cesspools located all over the city, hence the average well in Louisville is little else than a percolate from a series of privy vaults and cesspools. These facts have been published in the daily papers and made known to the public in various ways, and yet the average citizen fails to heed these warnings and continues to consume what is to our mind the most thoroughly polluted water to be found anywhere in the State.

Louisville has the name of being antiquated, and in this particular she is something more than three thousand years behind Rome, the water-supply of which excels any modern city, and which was constructed away back in the days when it is said that sanitation was unknown, but it is very evident that the men who devised and had the

great aqueduct built were considering something far more important than a supply of water for the baths.

If the council of Louisville were to do its duty there would not be another cent appropriated for wells, and those in existence would be closed up at once and water plugs located in their places. Until this is done the death-rate in Louisville from typhoid fever will continue high.

Current Surgical and Medical Selections.

DENSITY OF POPULATION.—The density of population in foreign countries has recently been computed (Philadelphia Medical Journal). Great Britain takes the lead, with 132 inhabitants per square kilometer. Then comes Japan, 114; Italy, 108.6; Germany, 104.2; Austria, 87; Hungary, 59.6; France, 72.2; Spain, 35.9; United States, 8.4; and Russia, 5.9.—*Denver Medical Times.*

THE SUPRAORBITAL REFLEX.—D. J. McCarthy (quoted in Philadelphia Medical Journal) has described a new reflex caused by light tapping over the distribution of the supraorbital nerve and resulting in a few fine fibrillary twitchings in the inferior fibers of the orbicularis palpebrarum. Practical clinical experience shows that this reflex has an established value in the pontine localization of lesions.—*Ibid.*

LEVASCHOFF'S METHOD OF TREATING PLEURISY WITH EFFUSION.—This method, first proposed eleven years ago at the International Congress, consists in partially removing the serum or seropurulent effusion and then irrigating with tepid normal saline solution. Tanfilieff (Vratch; Philadelphia Medical Journal) reports ten cases treated in this way, with prompt amelioration of the distressing symptoms and final recovery.—*Ibid.*

CHILLS IN TYPHOID FEVER.—In eight hundred and twenty-nine cases of typhoid treated by Osler during ten years at Johns Hopkins Hospital, the onset was accompanied with chilly sensations in two hundred and thirteen instances and with actual chills in two hundred subjects. Of the latter, one hundred and seven had a single chill, while ninety-three had two or more chills. He calls attention to the fact that fever with chills may recur for several weeks during convalescence without any local signs of trouble.—*Ibid.*

IN AMPUTATIONS, where there is danger of secondary hemorrhage, it is well to leave the Esmarch bandage loosely applied, so that it may be at once readjusted if bleeding recurs.—*International Journal of Surgery.*

PLEURAL EFFUSION OF ENLARGED LIVER.—To distinguish between a small pleural effusion and an enlarged liver or subdiaphragmatic abscess, Henry Jackson (Boston Medical and Surgical Journal) determines by percussion the upper line of dullness on the chest wall and then has the patient breathe in deeply and hold the breath. The upper area of dullness will now be found at a lower level if the liver and not the pleura is involved.—*Denver Medical Times.*

THE DIFFERENTIAL DIAGNOSIS OF SMALLPOX AND CHICKEN-POX.—In a letter addressed to a contemporary, Dr. G. S. Perkins calls attention to a simple means of distinguishing chicken-pox from smallpox which deserves to be more widely known. He points out that the vesicles in chicken-pox are unilocular, whilst in smallpox they are multilocular. The practical result of this pathological fact is that if a chicken-pox vesicle be pricked with a needle its contents can be completely evacuated and the cell will collapse, whereas in smallpox if one makes twenty pricks with a needle the vesicle will not collapse, because, being multilocular, it is impossible to empty it. There are, of course, many other points of difference between the two; indeed, smallpox is only likely to be mistaken for the less serious malady when the practitioner is not alive to the possibility of a mistake in the diagnosis. In smallpox, even in its modified form, varioloid, the initial constitutional symptoms are early and well marked, with a considerable rise of temperature and cerebral disturbance. In smallpox the eruption is most abundant on the face and limbs, whereas in chicken-pox it is most abundant on the trunk and its distribution is more discrete and general. Moreover, in chicken-pox the eruption appears in crops and not, as in smallpox, within a few hours of the first appearance of papules. Then, too, there is the characteristic fall of temperature on the appearance of the vesicles. An absolutely characteristic feature of chicken-pox is the appearance on the body of vesicles of different degrees of evolution, some being fully matured while others have just made their appearance. In spite of these usually very distinctive features, cases now and then occur in which even the most experienced may hesitate to formulate a definite opinion. In such cases twenty-four hours' observation will almost invariably clear up the mystery and allow of a correct diagnosis.—*Medical Press and Circular.*

CARBOLIC ACID AS A DRESSING FOR BURNS.—On several occasions in the past the application of pure carbolic acid has been recommended in the treatment of burns. In view of the active escharotic properties of this substance the idea has never appeared to commend itself for adoption, but of late its use has again been advocated by practitioners in various parts of the world. Among recent advocates of the treatment Dr. Muench, of Washington, asserts that the application of the pure acid brings about healing much more rapidly than any other method of treatment. It also presents the advantages of suppressing the pain associated with this form of trau-

matism, in virtue of its analgesic action. Dr. Muench states that the acid coagulates the serous exudation, forming an impermeable layer which effectually protects the injured surface from contact with the air, thus fulfilling one of the most important indications in the treatment of burns. He has employed this treatment in burns of considerable extent without ever having observed symptoms of absorption or the undue formation of cicatricial tissue. In the face of this evidence it must be conceded that the application of the pure acid is, at any rate, devoid of injurious consequences, and we commend it to the notice of our readers who have much experience in this class of injury.—*Ibid.*

AGGLUTINATION IN TYPHOID INFECTION.—A. Di Donna has found that the serum of normal rabbits can agglutinate the typhoid bacillus in the proportion of 1:30. The serum of an immunized rabbit agglutinates the bacillus with which it has been infected as well as other typhoid bacilli. The same serum may, in the proportion of 1:100, agglutinate bacterium coli which were cultivated on agar several months previously. With increase of the degree of immunity, however, there is decrease of the agglutinating power of the serum. The agglutinating power of a given serum is almost always in direct relation to the virulence of the bacillus with which the animal has been immunized. It is also greater when the intravenous method of infection is practiced than when any other method is used. It is infinitely greater than the agglutinating power of the organic juices. A temperature of 60° C., acting for three hours on the serum of an immunized animal, does not destroy the agglutinating power. It is, however, lost in course of time, varying from twenty-five days to three months or more.—*Giornale Internazionale delle Scienze Mediche (Medical Record).*

TRAUMATIC strictures can practically never be treated by dilatation. As they nearly always occur in the deep urethra, such strictures, if they give any inconvenience, must nearly always be treated by a perineal incision.—*International Journal of Surgery.*

Special Notices.

CHEMICAL FOOD is a mixture of Phosphoric Acid and Phosphates, the value of which physicians seem to have lost sight of to some extent in the past few years. The Robinson-Pettit Co., to whose advertisement (on third cover page) we refer our readers, have placed upon the market a much improved form of this compound, "ROBINSON'S PHOSPHORIC ELIXIR." Its superiority consists in its uniform composition and high degree of palatability.

FOR shaking palsy nothing excels tinct. Aesculus Glabra, one half drachm. CELERINA, eight ounces. Teaspoonful every two or three hours.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

X-RAYS IN SURGERY.*

BY ARTHUR T. M'CORMACK, M. A., M. D.

Member Warren County Medical Society, Kentucky State Medical Society, American Medical Association; Surgeon-general Kentucky State Guard.

The discovery of rays of light which penetrate substances ordinarily opaque, termed by the discoverer, Professor Conrad Röntgen, X-rays, probably marks an era in medical and surgical diagnostics, and it may be classed with the discovery of the microscope, the clinical thermometer, and the stethoscope as one of the great mechanical agencies upon which scientific, as distinguished from empirical, medicine is based. In all cases in which it is of any value at all as a diagnostic aid it is probably the most valuable we have, as it is the most definite in the information which is given to the trained eye of any instrument at our command. While it is possible, owing to the initial cost of apparatus and the cost of maintenance, and the technical and electrical difficulties in the management of even the most improved machine being great, that X-ray machines may never become so universally employed as some of the cheaper assistants we now have, *e. g.*, the stethoscope or thermometer, the writer ventures the prediction that within a few years no medical or surgical diagnosis in any but the plainest cases will be considered definite or complete without a report from a reputable, competent radiographer. It will doubtless be difficult for physicians not familiar with the X-rays to understand the dependence upon them by every one accustomed to their use. Of course we are but at the threshold of our knowledge of

*Read before the Kentucky State Medical Society, Paducah, Ky., May 7-9, 1902.

this agency, but even now Williams is able to make a positive diagnosis of the beginning of tuberculosis long enough before physical signs can be found to make the difference between success and failure in the treatment of our most common and most dreaded disease, while Leonard has taught us not only to make an absolute positive or negative diagnosis of renal or ureteral stone but at the same time to locate it so definitely that the danger of the surgical procedures necessary to its removal is reduced to a minimum. The methods of these masters of our art are placed freely at the command of all medical men, and it is only he who will not who fails to avail himself of their assistance.

First, it may be better to give brief attention to the machinery and technique necessary for the production of X-rays of sufficient brilliancy to produce satisfactory results. The writer has used both the coil and the static machine, and while he freely admits that excellent results may be obtained from either, he feels confident that to any other than the X-ray specialist, or one who employs an operator, that the well-built static machine, with ten or more revolving plates, equipped with a first-class motor of sufficient power to get a very rapid revolution of the plates, will be more satisfactory than any other form of apparatus. I have used the Wimshurst-Holtz influence machine, made by Van Houten & Ten Broeck, of New York, with such success and pleasure that I do not care to consider other forms of apparatus, although there are probably others equally as satisfactory. I frankly advise that no one purchase a static machine, however, unless he have some form of motive power. I use and prefer a one-fourth horse-power Pelton wheel, but where it is available an electric power current does about as well. In country districts, where neither water nor electric power can be obtained, no static machine will be found satisfactory unless a small gasoline engine is purchased with it. It is very tiresome to turn even the lightest machine by hand power, and the light thus generated is an uneven one at best. The only troublesome thing one must do with a static machine is to keep several bowls of perfectly-dried calcic chloride in the case, and in very warm, wet weather—during dog-days, for instance—these bowls must be set in the stove and baked for some time, until perfectly dry. Rarely must this be repeated oftener than every seventh to tenth day in the summer; ordinarily once every month until the house begins to be warmed by artificial heat, when the bowls may be left alone until summer again. Much of this trouble (and it sounds worse than it is in practice) may be

avoided by having glass plates six or eight inches thick under the legs of the machine.

Crookes tubes have become legion in shape and design, almost threatening to become so numerous that each operator may have one of his own. I have found the Monell tube quite satisfactory in all ordinary diagnostic work, but rather prefer the Queen & Company self-regulating tube for making radiographs and for therapeutic purposes, as it is so much easier to control the vacuum.

In practice, the question frequently arises as to whether the examination should be with the fluoroscope or whether a radiograph should be made. It seems to me that no X-ray examination, especially in surgery, is complete unless the fluoroscopic examination is especially thorough. In all cases where a permanent record is desirable, as in operative cases or in cases where one is observing new growths of sufficient density to show on a plate, it is well to make two or more pictures at such angles as will best show the deviation from the normal. Each plate should be definitely identified and the distance of the plate from the tube noted, as well as their position relative both to one another and to the object radiographed. In medico-legal cases this is of especial importance, and the time seems to be almost at hand when the evidence in many personal injury cases will be considered incomplete without the testimony of a radiographer.

In considering the X-ray in surgery proper we more easily understand our subject by considering it (1) in bone surgery and (2) in surgery of the soft parts. We may for further convenience divide (1) bone surgery into (a) fractures and dislocations, (b) new growths involving bone, (c) diseases of the bones other than new growths, and (d) the detection of foreign bodies contained within bones or bony cavities; and (2) surgery of the soft parts into (a) the detection of foreign bodies in the soft parts, (b) new growths, (c) affections of the organs within the chest other than new growths, and (d) renal, ureteral, vesical, and hepatic calculi.

(1) *Bone Surgery.* (a) *Fractures and Dislocations.* The mistakes made by our profession in the treatment of this particular class of afflicted persons are more prominent than in any other branch of our art. Röntgen's discovery revolutionizes at once our methods of diagnosis and treatment, and makes both so accurate and safe that diagnosis in all cases where it is available is certain, and the prognosis and treatment are laid before us an open book. Of course many fractures and dislocations may be detected and treated almost perfectly without the aid of the X-ray (but

we can not safely tell which these are without its use), and I feel confident that if two radiographs could be taken, or even if sketches of the position of the fragments could be made from a fluoroscopic examination and this could be repeated after as complete reduction as possible, the physician would know almost perfectly the amount of displacement that probably would result. This could be shown and explained to the patient, and the necessity, should it exist, for wiring the fragments together could be made plain. Fluoroscopic examinations should be repeated frequently, and each observation should be carefully recorded. Many linear fractures without displacement can only be recognized from a radiograph. Every user of the X-ray must be surprised at the frequency of fracture of the small bones of the hand and foot in cases formerly treated as sprains, and they are of particular value in fractures complicated with dislocations, where one or the other of the injuries are frequently overlooked by ordinary examination. Most fractures, where there is great danger of permanent deformity, are easily recognizable from a simple fluoroscopic examination, and the method necessary for relief lies before one.

(b) In new growths involving the bones the value of the X-rays are apparent. It is well to remember that exostoses following fractures simulate new growths, and that the growths are nearly always a little more extensive than they appear, owing to the comparative softness of the edges. Frequently the entire area of the growth shows only as a dark spot on the negative, due to the rarefaction of the bone and the lower density of the tumor. Radiographs should always be made in suspected malignancy.

(c) In simple periostitis the edges of the bone appear roughened. The bone should be examined around its whole circumference very closely. In tubercular infection of the joints the infusion is apparent, and is always darker when purulent than when serotic, and the affected bone areas are roughened and less dense. In poliomyelitis of the long bones the borders of the canal are roughened. Of course the distinction between various bone lesions, whether tubercular, syphilitic, malignant, or simple, must be cleared up by the physical examination and history of the patient.

(d) Foreign bodies may be detected when they are driven into the bones or bony cavities when they are more dense to the rays than the bones, or when they are much less dense than the bones, but only in the latter case if they are of considerable size. Of particular interest is the localization of particles of glass, stone, or metal in the eye, or of similar substances or of bullets in the brain or pelvis.

(2) *Surgery of the Soft Parts.* (a) Foreign bodies in the soft parts, on the other hand, are more readily located. Particularly useful is this method in the removal of pins, needles, and small pieces of metal in the hands or feet. Every practitioner knows the annoyance and difficulty of finding such small objects. Instead of making radiographs in perpendicular planes, as is ordinarily recommended, I have found it much easier to locate the foreign body with the fluoroscope after thoroughly cleansing the nearest adjacent skin surface and then take a sharp scalpel of sufficient breadth and make a puncture to the end of the needle, or the broadest part of any other foreign body, and introduce a very small but strong pair of forceps through the puncture and remove the offending matter, the whole operation being watched through the screen or fluoroscope. This procedure is extremely simple and is not a matter of as many minutes as it takes to describe it. A similar procedure may be followed when sufficiently dense foreign bodies are in the nose, larynx, trachea, or esophagus. In these cases an assistant is necessary, who should introduce the proper forceps to reach the whistle, button, or whatever else may be there, so as not to injure the soft parts. The light necessary for this part of the procedure may be gotten from a candle. Then the operator, watching the introduction of the forceps with the fluoroscope, should guide the jaws to and see them grasp the edge of the object and gently yet firmly extract it. Modifications of this method will suggest themselves for foreign bodies in other parts.

(b) The size and depth of many new growths of soft parts may be marked out very definitely with the X-rays. Particularly important as modifying the character of operation is the location of growths of some size in the neck, as to whether they extend behind the clavicle and into the thorax. Several tubes of varying degrees of resistance should be used in such cases. Even large abdominal tumors can not usually be made out, but the displacement of the diaphragm is always noticeable. Aneurism may also be considered under this head for convenience. As a rule they are very dark and their pulsations easily noted.

(c) No examination of the chest may be considered as complete without the aid and confirmation of the fluoroscope. Many examinations of normal as well as abnormal chests are necessary for one to appreciate this fact. Surgically we are chiefly interested in empyemas, pleurisy with effusion, gangrene of the lung, and tuberculosis. Dr. Williams, in his extraordinarily complete work on this subject, has shown that in all affections of the lungs the diaphragm on the affected side has a relatively

lessened range of motion as compared with the sound side. Darkened areas in the lungs indicate disease of the lung substance, while cavities and emphysema are shown by clear, bright spots, or in the latter disease over all of both lungs. Pleuritic effusions are readily noted by the displacement of the lung and often also of the heart. In empyema the resistance to the light is much greater, and the area filled with pus is almost or quite black. Gangrene of the lung is similar in appearance to pneumonia, but the area is usually larger and darker. Displacement or enlargement of the heart may be readily noted and given its proper significance.

(*d*) Leonard has taught us how to make a positive diagnosis of renal or ureteral calculus by making a radiograph with a low tube—so low in fact that anything in the abdomen of greater density than the soft parts will be shown. He expresses perfect confidence in his negative as well as positive diagnosis, and his wide experience and perfect success make him our Nestor in this department. We can not yet as certainly find stones in the bladder or gall-bladder, but this is purely a question of technique and may be solved satisfactorily any day. It is important in all cases when ureteral or renal stones are located to operate as soon as possible afterward, not only for relief of the condition but also because the stone may move and not be readily found.

Thus briefly have I outlined the present status of the X-ray in surgical diagnosis. Truly we may say we are but in the infancy of this most wonderful art. Every day is bringing newer uses for the X-ray in all branches of medicine. No conservative expert will claim that everything in medicine is settled by its use, or that any agency we now have at our command should be discarded. It makes a most—may we not say the most—valuable addition to our diagnostic armamentarium, and its very value makes it more important that we should the more frequently examine the sputum and the blood, that we should all the better ground ourselves in the use of the stethoscope and microscope, that we should collect and keep more careful histories and case-notes, and above all that we be better, broader, more careful, and more painstaking doctors.

BOWLING GREEN, KY.

THERAPEUTICS OF X-RAYS.*

BY JAMES B. KINNAIRD, M.D.

Mr. President and Gentlemen: Permit me to thank your Committee on Questions for selecting me to present a paper upon the "Therapeutics of X-rays," and pardon me if the subject is not thoroughly treated. The limited time at my disposal has prevented me giving an exhaustive paper upon the subject.

From the beginning of time men have been seeking for remedies that may alleviate pain and prolong life. The animal, vegetable, and mineral kingdoms have been brought into requisition with this end in view. We have advanced year by year, decade by decade, sometimes slowly and at other times with leaps and bounds, still we have not discovered the elixir of life. Prof. Loeb has startled the world by his recent experimentations, and has given electrotherapeutics a new impetus, that had already been set in motion by radiotherapy. It is not possible to prolong life indefinitely by any means at our command, but I think that years may be added to the lives of many disconsolate beings who have been waiting the inevitable, suffering with malignant disease. We have in X-rays an agent that has accomplished much in a class of inoperable diseases, and the future is pregnant with hope. Already many local and constitutional diseases have yielded to the X-light. While yet in its infancy, radiotherapy has removed from the minds of the public that ancient dread of cancer.

Many experimenters have reported marvelous results from the use of X-rays in the treatment of epithelioma, sarcoma, carcinoma, and lupus. The results obtained may only be temporary, but if relief can be given for only a short time much has been gained. If the results prove permanent we have an agent whose value can not be overestimated. Many experimenters have observed that pain ceases when a diseased condition is treated by X-rays. Those who have been addicted to the use of opiates for the relief of pain in malignant diseases have declared that the exposures give prompt and oftentimes permanent relief. This effect is produced probably by benumbing the nerve supply. A general tonic effect results from exposures, stimulating the nervous system, improving the appetite, and assisting assimilation.

My experience with X-rays in the treatment of diseases has been limited. The first case treated by me came under observation last

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October, and although this case has been reported I shall give an outline of the treatment and the outcome of the case. This case, supposed to have been lupus, was referred to me by Dr. Mays, of Lowell, Kentucky, for advice as to the advisability of having it cauterized. At my suggestion she began the treatment, with meager hope of ultimate success. The treatment did not appeal to her as a rational measure, but she cheerfully pursued the treatment for seven weeks, when she was dismissed cured.

This patient, a married woman aged thirty-six, about eight years ago had a dry, itchy scale appear above the left eyebrow, which in time became elevated and bleb-like, peeled off, and began to ulcerate. In spite of treatment it spread until it had reached in size one inch in width and one and a half inches in length; had eaten its way over the eyebrow and was destroying the upper lid, with a decided tendency to dip into the post-orbital region, there being a small, deep fistula extending downward and backward. Local and constitutional treatment had failed to check its advance.

I began by giving exposures ten minutes in duration, with her face eight inches from the Crookes tube. The face and head were shielded with rubber cloth, a perforation being left to correspond with the diseased surface, through which the rays were applied. After the fourth exposure there was noticeable a tendency to granulation, which continued uninterrupted until cicatrization was complete.

During the first week I gave six exposures; second week, three; third week, two; fourth, two; fifth, two; sixth, two; seventh, three, making twenty in all, when the case was pronounced well. One month after the case was dismissed a small nodule appeared on the margin of the cicatrix, which yielded promptly to a few exposures.

The patient's general health was very greatly improved and the facial neuralgia has not returned. Immediate relief from pain was experienced from a single exposure. During the course of treatment a slight erythema, resembling a mild sunburn, appeared around the margin of the lupus, but there was no dermatitis.

The cicatrix resulting was unusually white, due probably to the destruction of the pigmentary layer of the skin. The color of the cicatrix is gradually resuming the normal appearance of the skin.

The second case that came under my care was a man aged eighty, who had an epithelioma at the outer canthus of the right eye. Eleven years previously a small nodule appeared at this location, which in time broke down and began to ulcerate. It had been stationary for several years.

At the time he first consulted me, December 11, 1901, it was one half an inch in diameter, circular, deeply excavated, with indurated edges. There was a small nodule about the center of the lower lid one fourth inch in diameter, and another on the nose near the inner canthus of the right eye one half inch by one fourth inch. Both were apparently in a condition for ulceration. There was a chronic conjunctivitis and slight ectropion. There was no indication of any specific lesion.

After a few exposures there was perceptible improvement. After eleven exposures, each of fifteen minutes' duration, extending over a period of thirty days, the epithelioma was entirely well, the nodules had disappeared, excessive lachrymation had ceased, and his conjunctiva was clear. In conjunction with exposures I gave him static treatment. When the case was dismissed he expressed himself as feeling better than he had for ten years. He returned home cheerful and hopeful, but unfortunately died three months afterward with heart failure. Up to the time of his death there was not the slightest indication of a recurrence.

I have under treatment a case of eczema which showed no tendency to heal from X-rays for a time, but a mild dermatitis followed, which has resulted in much benefit. This case, recently reported by me to the Central Kentucky Medical Association, I regarded as discouraging. Since that report was made a wonderful improvement has occurred. Even eczema should yield to this procedure. Some favorable reports have appeared in recent medical literature, and I believe that when the technique is better understood many forms of eczema will be treated successfully.

I have had under treatment four months a case of recurrent scirrhus in a woman fifty-one years of age, whose right mammary gland and axillary glands were thoroughly enucleated two years ago by a very skillful surgeon. One year after removal of glands a number of nodules appeared over the right sterno-cleido muscle and in the axilla. A second operation was done. Since that time numerous nodules have developed over the right pectoralis major muscle and epigastrium. Four months ago there was edema of right arm, with considerable pain. I began X-ray exposures at that time. Pain ceased, the edema disappeared, but the metastatic process continues. She has now an exasperating cough, for which I am using ozone, generated by static machine. Relief in this case can be only temporary.

The first indication of scirrhus was a small nodule in the mammary gland eight years ago, when I insisted upon having an operation done.

Had an operation been done at that time the disease might have been eradicated.

At the present time I have a case under treatment referred to me by Dr. Mann, of Nicholasville, Kentucky, which was diagnosed lupus. No microscopical examination has been made. It has the appearance of sarcoma; the odor is very offensive, and the discharge of pus, large at first, has been lessened very materially, while the odor has been mitigated. The patient is a woman seventy-one years of age, mother of eleven children. Eleven years ago a black wart followed a hen-peck on her left hand, which became inflamed and in time began to suppurate. This spread over her wrist, thumb, and index finger. She consulted a physician in another locality, who applied caustics, in consequence of which she lost her thumb and index finger. This destruction of tissue may have been due to the disease. There was no return of the disease for a year, when an ulcer appeared on her left arm, then successively upon her face, lower lip, and left ear. Four years ago the right parotid gland became affected, broke down, and has continued to suppurate. When she came to me the parotid gland was enlarged to such an extent that it extended below the angle of the jaw, rendering mastication impossible. She had no appetite, was feeble and scarcely able to walk. Now her appetite and digestion are good and she can walk to my office without tiring.

She has had thirty-six exposures. The purulent discharge has decreased until now it is not one fourth in quantity and is less offensive than it was in March; the parotid gland has shrunk to its normal size; the nodules on face have disappeared, and one on left ear is undergoing atrophy. Her complexion, at first sallow, is now clear. Her general condition is improving, and instead of being despondent she is cheerful and contented. Her present condition is favorable, and treatment will be continued. With all the cases thus far treated I have used the medium and high vacuum tubes, more especially the latter, and the results have been satisfactory.

Workers in this line are at a variance as to which tube is to be preferred. Some contend that the best results are obtained from the high vacuum, others the low vacuum tube. If it is the light that cures, it makes very little difference which is used, for after all the light is only electricity. It is electrical energy that penetrates the tissues and brings about the results.

In making exposures I place the diseased surface at from two to eight inches distant, according to the case and frequency of exposures.

The distance should be regulated by the effect to be produced. When I began using X-rays as a therapeutic measure I placed the tube at the maximum distance and shielded the healthy tissues by a rubber cloth having a perforation corresponding to the size of the diseased tissue. Afterward I had made a short, wide-mouthed tin funnel, flared sufficiently to protect the healthy parts, with apex two inches in diameter, within which I could slip perforated rubber diaphragms. These are made from stiff rubber sheets one eighth inch in thickness, and can be cut any size required. If the diseased surface should be two inches or more in diameter the diaphragm can be dispensed with.

Sheet lead, pure tin, or pasteboard covered with tinfoil, or any poor conductor of X-rays can be used. It is not necessary to insulate the shields, as was at first advised by Tesla.

For protection of the operator and patient Dr. Williams, of Boston, Mass., places the tube in a wooden box with an aperture controlled by different sizes of diaphragms to suit the case under treatment.

If the case is treated daily, I place the patient at the maximum distance, eight inches. If the disease is acute and of rapid growth, then I place the tube at from six to eight inches distant. If the case is chronic and of long standing the tube should be placed nearer. Good judgment is required in this as in every procedure.

No injury has been produced by me thus far. In one case I thought I had caused a severe dermatitis; however, a cessation of treatment for four or five days brought about a favorable result. I have not had a burn either in radiography or radiotherapy.

Patients want immediate results, and if we listen to their importunities we are liable to do harm. I think we can accomplish by the static machine all that can be done by the Ruhmkorff coil, with less risk and with less cost. The current can be better controlled when X-rays are made by the machine. The country physician, to whom the electric current is inaccessible, can use a good static machine and obtain the same results as his city confrère. The machine is less expensive and can be used for general electrization as well as X-raying, while the coil is limited in its application. My machine is run by hand during the daytime and by electric motor at night, while the commercial lights are on.

Much harm may be done by reckless experimenters with Röntgen rays until the science of radiotherapy is accurately determined. This is true of all methods and new therapeutic agents. All new procedures

must pass through the crucible before their adoption. The errors of judgment and technique lead to improvement and to accurate knowledge.

It is the duty of workers and writers to not only report their successes but also their failures, that we may sooner learn whether or not the new procedure is to be of any practical utility. It seems that recent discussions in medical societies indicate that we are getting to the point where treatment by X-rays is a rational procedure, and that much can be expected from a proper application of the agent in suitable cases.

Several months ago skeptical editorials appeared in the leading medical journals; to-day they are more hopeful and less critical. The tendency hitherto has been to decry instead of praising this novel procedure.

X-ray workers are advising all who use this new agent to be accurate in their reports, to be perfectly honest in their statements, and to be careful in the use of the rays, so that no discredit be brought upon the procedure or the profession. There is great diversity of opinion yet as to the technique of X-ray work.

The use of X-light promises much in superficial malignant disease and even in deep-seated internal cancers pain is relieved and much good accomplished. You may depend upon the relief of pain even though the disease is not eradicated. For the treatment of all inoperable cases of cancer, eczema, rodent ulcers, and tuberculosis, radiotherapy promises to fulfill a long-felt want.

Time of exposures should be governed by the nature of the case and should not be longer than from ten to twenty minutes at a sitting, according to location and condition of the growth. If the growth is slow, the longer the exposure; if rapid growth, short exposure.

With a high resistance tube and with either a Ruhmkorff coil or an influence machine beneficial results should become apparent in two weeks. If improvement is evident at the expiration of two weeks then we can predict the ultimate result. If no improvement is apparent at that time the prognosis is bad.

Dr. Pusey says: "As a general proposition the use of X-rays should in my opinion be limited to those cases which for any reason it is inadvisable or impossible to treat by ordinary methods. In other words, until our experience with X-rays extends over a longer time their use should be a reserve method of treatment.

"1. In all cases of malignant diseases which have been operated upon there is reason to urge the subsequent use of X-rays as a prophylactic measure.

"2. In all inoperable cases of malignant disease the use of X-rays should be tried.

"3. In all such cases there is a probability of relieving pain and a possibility of inhibiting the progress of the disease."

If it was satisfactorily proven that cancer is due to bacteria we would contend that the X-rays kill the micro-organisms, but the medical profession do not as a unit subscribe to this theory.

"Schiff thinks that the violent inflammation produced in lupus is sufficient to injure the life conditions of the micro-organisms, and therefore their continuance; Kummel, that a specific effect is not produced on the lupus by the X-rays, but rather perhaps an electro-chemical or tropho-neurotic influence lies at the bottom of their work; Gocht, that while the artificially non-infectious and harmless inflammation which reaches to the subcutaneous tissue is going on, an annihilation of the tubercle bacilli and healing take place. Albers-Schonberg suggests that possibly the X-rays have a direct effect on the tuberculous tissue, an effect which may be aided by a hyperæmia; but he thinks that we are unwarranted in ascribing a healing influence to the acute dermatitis, because in some of his cases of lupus the nodules dried up and disappeared without dermatitis in treating cases of lupus." (The Röntgen Rays in Medicine and Surgery—Francis H. Williams.)

Freund states that "When the X-rays are employed for treatment, and not for the purpose of diagnosis, twelve volts should be used, and not more than one and one half amperes; that the spark length of the coil should not be more than thirty centimeters, and that the interruptions should be between eight hundred and one thousand per minute." On the other hand, Dr. Williams uses one and one half amperes and two hundred and fifty volts.

In using the static machine two hundred to four hundred revolutions per minute will accomplish all that is desired. Dr. Zeit, of Chicago, thinks that from experiments made upon guinea-pigs that "Röntgen rays have no direct bactericidal properties. The clinical results must be explained by other factors, possibly the production of ozone, hypochlorous acid, extensive necrosis of the deeper layers of the skin, and phagocytosis."

It has been demonstrated by many electricians that lupus, carcinoma, epithelioma, scirrhus, osteosarcoma, and other malignant growths disappear under the magic influence of the X-rays, and many deep-seated, internal, painful growths are being improved. Just what effect is produced upon the tissues that brings about these wonderful transformations has

not yet been determined, but we confidently expect some learned pathologist at no distant day to discover and accurately describe the process. The opportunity awaits some aspiring student to immortalize himself. The X-ray as a therapeutic measure is steadily growing in favor, and if permanent results are obtained from reported cures we will then have an agent of marvelous power, which will do away with fear and anxiety. Time alone will determine the status of this expedient in the treatment of disease.

Let us not be too enthusiastic or too confident, but let us devote our time and our energy to studying this new therapeutic fad and rendering its technique more accurate. In this way we will aid in putting it upon a firm foundation if it is a rational method, and will bring relief to many hitherto hopeless sufferers.

LANCASTER, KY.

SERUM THERAPY IN LARYNGEAL DIPHTHERIA.*

BY ADOLPH O. PFINGST, M. D.

It has not been long since membranous croup and diphtheria were considered separate and distinct diseases. Even after the discovery of the diphtheria bacillus by Klebs in 1884, its subsequent isolation and cultivation by Loeffler, and the observation that it is present in the exudation of diphtheria and membranous croup alike, only a small portion of the medical profession adopted the view that these two conditions are identical.

Certainly with so vast a difference in their clinical course it was hard even for the most sanguine investigators to adopt at once the idea of a unity of the infectious element, and much skepticism existed regarding the bacteriological diagnosis. However, since the advent of the serum therapy and its more general employment various manifestations of diphtheria have been recognized, and the membranous croup of the older writers is now generally designated "laryngeal diphtheria." It is in this primary laryngeal form of diphtheria, until recently the most dreaded and fatal of the affections of childhood, that antitoxin has achieved its greatest success; but also in the faucial variety, with secondary laryngeal invasion, has the serum treatment been of inestimable value.

*Read before the Kentucky State Medical Society, Paducah, Ky., May 7-9, 1902.

Although it is my purpose to-day more especially to point out the influence of antitoxin in laryngeal diphtheria, I will ask you to bear with me for a brief résumé of some important statistics bearing on diphtheria in general. By applying to the health boards of the larger cities of the United States, Canada, and England I have, through the kindness of the health officers, obtained some valuable and interesting figures. German statistics are taken from hospital reports. It is to be noted that without an exception the decrease in the death-rate began soon after the introduction of the serum therapy, and that it has continued steadily. I will not cite all of the figures at my command, but will confine myself to those most complete.

The greatest reduction in the death-rate after the introduction of antitoxin is reported from Chicago. From an annual mortality rate of 41.96 per cent of cases in the period of five years before the use of serum treatment the death-rate was reduced to 6.79 per cent in the five following years, during which 5727 cases were treated with antitoxin. The least reduction was recorded in Glasgow, Scotland, where diphtheria is comparatively a rare disease. In the last six years of the pre-antitoxin period 42.2 per cent of cases of diphtheria died; in the six subsequent years the death-rate in 1212 cases reported was 21.6 per cent. In Sheffield, England, the best year since the antitoxin has been in use (1901) gives a death-rate of 15.96 per cent. Dr. John Robertson, the medical health officer of Sheffield, has in a personal letter expressed the belief that the less favorable results in England from the serum therapy can be attributed largely to a certain timidity on the part of the profession of England in adopting the new treatment. He stated that the treatment was not adopted in Sheffield until 1897, and that since then the mortality rate, which had ranged from 35 to 43.5 per cent, has gradually been reduced until in the last year it was only 15.96 per cent in 1596 cases. This, however, included all cases, irrespective of the manner of treatment, and as antitoxin had been administered in but 45 per cent of the cases it is in fair proportion to our American records. In Edinburg the mortality rate for 1901 of over 1000 cases was 18 per cent; manner of treatment not specified. Briefly glancing at the reports of several American cities, we find St. Louis with a death-rate of 35.46 per cent for the six years before the antitoxin period and 15.76 per cent for the six following years. Of the latter, which included 13,593 cases, 2347 were given antitoxin and only 8.75 per cent of these died, though the majority of the cases were among

the poor and imperfectly fed, many of whom were of low vitality. Similar records from Newark, N. J., give a mortality of 15.4 per cent of all cases, 7157 in number, in six years of antitoxin treatment, and less than 9 per cent in those treated with antitoxin. The figures from the Health Board of New York City correspond with the foregoing. The mortality rate for five years prior to the use of antitoxin was 28.03 per cent; for the same period since then, including 62,902 cases, 14.32 per cent.

To judge accurately and intelligently of the real value of the serum therapy a comparison should be made of the cases treated with and without it. Most health boards have been unable to obtain such reports. Boston, for instance, gives an average mortality of 10.5 per cent of 10,001 cases, and Buffalo 17.5 per cent of 5830 cases reported in the last six years; Washington 11.85 per cent of 675 cases, Baltimore 8.8 per cent of over 1000 cases, Minneapolis 10.2 per cent of 1863 cases, and San Francisco 12.74 per cent of 383 cases for the last year. All cases were included in these reports without reference to any special treatment. In Washington record was kept by the health board of the manner of treatment for seven months. But 3.8 per cent of the 211 cases treated with antitoxin died, while the death-rate in the 190 children treated by other means was 34.2 per cent. In Newark 4283 cases were treated with antitoxin, with a death-rate of 10.02 per cent; 2904 were treated without it, with a death-rate of 20.35 per cent. In all of these cities the mortality in the pre-antitoxin period ranged from 28.5 to 42 per cent. Dr. M. K. Allen has recently made a careful investigation of 402 cases reported in Louisville in four months of last year, the results of which he published in the April issue of *The American Practitioner and News*. Antitoxin was used in all but 59 cases, with a death-rate of 6.8 per cent. In the cases not treated with antitoxin the mortality rate was 22 per cent. In Germany, a summary of over 100,000 cases gathered by Dr. F. Seigert from reports of all of the leading hospitals of that country show an average mortality of 41.5 per cent in the four years previous to the employment of antitoxin, and an average of 16.4 per cent in the four subsequent years. As the mild cases are not often sent to the hospitals, these figures include mostly severe cases.

In the compilation of the various statistics to prove the value of antitoxin treatment, the fact must be kept in mind that many of the cases reported as diphtheria in recent years were formerly classified as

follicular tonsillitis. This is evidenced by an increase in the number of diphtheria cases reported to most of the health boards in the last six to eight years. Illustrative of this point I quote from the Buffalo records as follows: "The fact was established that a large majority of cases previously considered as non-infectious tonsillitis were due to the diphtheria bacillus." From the Chicago report I took the following: "Frequently while clinical symptoms do not yet point to diphtheria the microscope will reveal the presence of the diphtheria bacillus, whereupon antitoxin is at once administered."

The more the pseudo diphtheria bacillus is studied the more convincing are the results that it is the same as the Klebs-Loeffler bacillus. Its morphological and cultural characteristics are the same, the only difference between the two being the absence of the poisonous by-product in the pseudo bacillus. Knowing this, too much reliance should not be placed in the bacteriological diagnosis of diphtheria, especially in the rapid diagnosis in twenty-four to thirty-six hours. The presence of the pseudo membrane should be recognized as the most important symptom of diphtheria. However, we know also that occasionally there may be a pronounced pseudo membrane without the presence of the diphtheria bacillus. These cases, which are often met with during the common infectious diseases of childhood, are due to an infection of the pyogenic cocci. They run the same clinical course as the others, but fail to respond to diphtheria antitoxin treatment. I believe that the results of diphtheria treatment would be still better were it not for these cases, in which we have to deal with complications of the staphylococcus and the streptococcus. We know that in cases of mixed infection there is a tendency to involvement of greater areas, and that the combination of the toxic effect of the diphtheria bacillus with the septic infection is more apt to lead to a fatal termination than a simple infection.

From the latest report of the Public Health Department of San Francisco I note that for two years, in which complete records were kept, the mortality was 10.6 per cent in simple diphtheria, while in the cases in which the microscope also revealed staphylococci or streptococci the mortality rate was 16.9 per cent.

In laryngeal diphtheria our main diagnostic guide is the clinical course of the disease, characterized by symptoms referable to the larynx, viz., the characteristic cough, hoarseness, and symptoms of stenosis.

These cases can not so easily be mistaken for other conditions; certainly not as frequently as simple tonsillitis and diphtheria are mistaken one for the other. The statistics of laryngeal diphtheria therefore appear to me more convincing than those of the faucial variety. Among the cases reported as faucial or tonsillar diphtheria are included, as we have seen, many cases which formerly went on record as simple tonsillitis. That this accounts partly for the reduction in the mortality of diphtheria is evident, yet it does not make as great a difference as the increase in the number of cases reported would indicate.

In the Boston statistics, where the disease was classified into positive and negative cases, according as a bacteriological diagnosis had been made or not, the death-rate in the former was 9.4 per cent and in the latter 10.4 per cent. Statistics uniformly show an almost marvelous reduction in the mortality of the laryngeal cases of diphtheria. This disease has in fact been so modified by the serum treatment that it is now almost entirely within our control. Not only has the mortality been lowered, but the necessity of operative interference has been materially lessened. In the pre-antitoxin period about 90 per cent of laryngeal cases required intubation, compared to 35 per cent since the introduction of antitoxin.

In considering the advances made in the treatment of diphtheria in the last ten years, the relief of laryngeal stenosis through intubation should be accredited with part of the success in the management of this disease. In many neglected cases not seen by the physician until the larynx is involved, and also in primary laryngeal cases, intubation often becomes necessary to relieve the stenosis and to avert impending death until the effect of the antitoxin can be obtained. O'Dwyer introduced this brilliant surgical procedure in 1885, but its employment did not become general for several years; in fact, the European physicians have only in the last few years been taking it up, and even now there is a preponderance of tracheotomy over intubation. After the value of intubation became recognized the mortality in "membranous croup" was lowered from 90 to about 65 per cent. Since intubation has been supplemented by antitoxin the death-rate has been so lowered that the former per cent of recoveries—10 to 15 per cent—now almost represents the death-rate. As a consequence, statistics no longer note the number of recoveries, as heretofore, but now record the percentage of deaths. A remedy with such results may almost be considered specific, and we can not fail to see in it one of the greatest contributions to medical

science and a triumph for bacteriological research. The antagonists of the serum therapy, of which there were many, have diminished rapidly, until to-day it is practiced almost universally. In most of the health reports the mortality in the laryngeal cases is still over 20 per cent, St. Louis showing a mortality rate of 28.26 per cent in 322 cases, and the last report of the American Pediatric Society 27.2 per cent in 1704 cases. Private statistics of such reliable men as Rosenthal, of Philadelphia, Shurley, of Detroit, and others, show much better results, the former 13 $\frac{1}{3}$ per cent of 100 cases, the latter 16.1 per cent of over 100 cases.

I believe the high rate of mortality in the laryngeal cases can be attributed principally to the fact that many of these cases are neglected until after stenosis has taken place and the children have lost their power of resistance. This is especially true in the primary laryngeal affections. The only children whom I lost of diphtheria in the last year were three cases of this kind, all of whom were in a moribund condition when first seen. Only one of these revived sufficiently after the intubation to be given an opportunity for a second dose of antitoxin. The disease had run on for eight days before being seen by a physician, and although entirely relieved of stenosis by the tube death resulted in twenty-four hours from general exhaustion.

Another case similar to this one is worthy of a brief report, as it illustrates the value of intubation in connection with serum therapy. In August, 1901, a girl of five years was seen in consultation. The child had been sick with a cold, as the mother said, for six days, which had just in the last few hours extended to the lungs. When the attending physician saw the child all evidences of laryngeal diphtheria were present, and he urged an immediate operation. When I saw the patient there were evidences of diphtheria on both tonsils. She was breathing with great difficulty, retraction of the supra-sternal region and ribs being marked on inspiration. The face was cyanotic. As soon as the tube was inserted she became easy, the cyanosis disappeared, and after an injection of 2000 units antitoxin she passed into an easy sleep, which lasted for four hours. As the faucial membrane showed no change, in ten hours I repeated the injection of 2000 units antitoxin; in the meanwhile stimulation with whisky and strychnine were resorted to. Five hours after the second injection breathing suddenly became obstructed and the child again became cyanosed. Removal of the tube revealed partial plugging of its lumen. A few moments later the child, in a paroxysm of coughing, expectorated bronchial casts of

the diphtheritic membrane. Although breathing seemed easy the tube was reinserted. This child made a good recovery, the tube being removed on the fifth day.

In the matter of dosage I am guided by the recommendation of the committee of the American Pediatric Society which investigated the subject of diphtheria and antitoxin treatment. I quote from the report as follows: "All cases of laryngeal diphtheria, the patient being two years old or over, should receive: first dose, 2000 units at the earliest possible moment; second dose, 2000 units twelve to eighteen hours after the first dose if there is no improvement in the symptoms; third dose, 2000 units twenty-four hours after the second dose if there is no improvement in the symptoms. Patients under two years of age should receive 1000 to 1500 units, the doses to be repeated as above."

The tendency in the last year has been to give larger doses, some going to such extremes as to give 40,000 to 60,000 units in twenty-four hours. While I have myself frequently given injections of 3000 to 4000 units in children under seven or eight years, I believe that it is of greater importance to repeat the dose at shorter intervals than to give larger doses. It is bad policy to procrastinate with the repetition of the doses if improvement is not noticed in about ten hours.

One of the greatest obstacles to the success of the antitoxin in the beginning was the opposition of the laity to its use and a certain amount of timidity on the part of the physician in persisting in its employment. Although this has been overcome as the people have gradually become educated up to the good of the remedy, I believe there is still much laxity in regard to a repetition of the dose, partly on account of the additional expense each injection incurs and partly on account of insufficient faith of the physician in the efficacy of a second dose.

There has been so much written about the preparation of the diphtheritic serum, the computation of its units, strength, and manner of its employment, that these details are familiar to every physician. The point of greatest obscurity to-day in connection with diphtheria is the difference between individuals in their susceptibility to the disease. Neisser, Wasserman, and others have shown that the blood of the majority of individuals, including those who never had diphtheria, contains a certain amount of antitoxin, which protects the body to a greater or less extent against the invasion of the diphtheria bacillus. As the blood of the newborn is free of antitoxin this immunity is

believed to be an acquired condition, either naturally or artificially. It increases with the age of the individual, which accounts for the lessened susceptibility or almost complete immunity in adult life.

It is now the consensus of opinion among bacteriologists that the so-called pseudo diphtheria bacillus is identical with the Klebs-Loeffler bacillus. Behring (*Bibliothek von Keller, Bd. 2*) has recently advocated a new theory regarding the natural acquisitions of immunity to diphtheria, in that the pseudo diphtheria bacillus, or rather the non-virulent Klebs-Loeffler bacillus, while residing on the mucous membrane, not only produces toxins but also antitoxin in certain proportions. He believes that the non-virulent bacillus, which is universally distributed and may be harbored on the mucous membrane of any individual, is continually producing antitoxin, which finds its way into the circulation. By this continuous action, and the absorption of bacterial products, an insusceptibility results which is more prolonged or continuous than the immunity following an attack of diphtheria. The latter, though more absolute, has a limited time.

Contrary to most infectious diseases, the period of immunity following an attack of diphtheria is very short, the protecting bodies being rapidly eliminated from the system. It has been variously placed at twelve weeks. Relative to this question Professor Karl Fraenkel, of Halle, in a recent letter, states that immunity after an attack of diphtheria, and also after the injection of antitoxin, lasts from four to six weeks. The immunity artificially acquired through the introduction of antitoxin into the system can, by increasing the serum according to demand, be made more absolute though not more lasting than the natural form. It is now the accepted view that antitoxin acts by stimulating the tissue-cells, establishing in them a tolerance of the toxins. Although it has this same action at all stages of the disease, its therapeutic value is greatest at its onset. Statistics show that the lowest death-rate in diphtheria occurred in those children who were injected on the first day of the disease, and that with every day of delay there was an increase in the mortality rate.

Very excellent results have also been reported from antitoxin as a preventive measure." Behring reported one hundred thousand cases in which the serum treatment was employed as a preventive in which only ten cases of diphtheria developed, although many of the children had been exposed to the infection. The New York State Board of Health has on record one hundred and sixty thousand cases in which antitoxin

was used as a prophylactic measure, among whom seventy-nine cases of diphtheria developed, mostly of a mild type. This observation has led to the adoption of prophylactic injections as a precautionary measure in many hospitals and orphan asylums during the prevalence of epidemics of diphtheria. After the disease has developed the cells are weakened by the prolonged toxic action and cease to respond with the same activity to the action of the antitoxin. Notwithstanding this, statistics show that even in neglected cases, when injected late, the mortality rate has been lowered by the use of the serum therapy. In doubtful cases I believe it is poor policy to postpone treatment in order to be able to confirm diagnosis. Treatment should be resorted to at once, as the observation of the leading authorities on diphtheria has been that the serum is innocuous, even when used in large doses.

Post-diphtheritic paralysis, edema of the joints, albuminuria, and sequelæ of diphtheria have, especially by the laity, been attributed to the remedy employed instead of to the diphtheritic poison. It may be that the absolute number of cases of post-diphtheritic paralysis is greater than formerly, but this can easily be accounted for in the greater number of recoveries than formerly. Relative to this point, McFarland very correctly says that "paralyses following the use of antitoxin are due to the agent only in so far as it saves the patient from death."

The health boards of our larger cities have in the last years prepared their own antidiphtheritic serum for distribution among the poor, otherwise we obtain it of the large manufacturing pharmacists. While I believe that we can not go amiss by employing the products of such firms as Mulford, Stearns, and Parke, Davis & Co., whose reputations are dependent upon the efficacy of their product, I believe that there should be some standard of excellence, and that all serums dispensed should conform to that standard. Dr. Edward Rosenthal, of Philadelphia, who has done much excellent work in the study of diphtheria, suggested such a plan to the American Medical Association in 1900. His idea was the appointment of a pharmaceutical committee, which should define a "unit" of antitoxin and give a standard of strength of the toxin at a certain age, stating its maximum and minimum fatal dose.

Before closing I would add just a word as to other treatment, for I believe that since the employment of antitoxin has become universal other important measures are not given the place that they deserve.

A brisk calomel purge to empty the alimentary tract, local antiseptic solutions (Loeffler's and others) in faucial cases, steam inhalations in laryngeal cases, and heart stimulants to meet the indications, are indispensable auxiliaries to the treatment of diphtheria.

LOUISVILLE.

STOMACH DISEASES IN CHILDREN.*

BY H. H. ROBERTS, M. D.

Stomach disorders are more frequently associated with adult life than with children. The stomach of the child is regarded, especially by the laity, as an organ that must necessarily have spells of indigestion, as being a natural consequence of childhood, and little thought is given to the pathological condition which may exist therein. Parents give little heed to those disorders following an over-engorgement of candy, cakes, ice cream, soda, ices, sweetmeats, etc., which the child is allowed to partake of indiscriminately, without a thought of the disastrous results which are sure to follow.

The child, the pride of the parents and the joy of the household! How carefully it is watched and guarded from any injury that might befall it from accident, carefully drilled in speech and demeanor, while the digestive tract is left to its own sweet self, without a guide or commander, to have what the child fancies or the tooth may crave. The child learns early in life to eat anything and everything it can get, and to cry for what it can not get.

How are these little ones taught to masticate food? In the vast majority of cases not at all. They gulp down great masses of solid pieces of meat, bread, vegetables, etc., perhaps using quantities of coffee, tea, water, or even beer, to wash them down. A fond parent remarked to me, "My boy eats as much as I do, and quicker, too."

This wholesale eating is thought to be an indication of good health, coupled with robust appetite. When the child tosses in its sleep at night, grits its teeth, moans, and perhaps screams with night-terrors, the whole disturbance is attributed to worms, and the child is fed on worm candy. The usual custom is to follow this treatment with castor oil, which removes the irritating matter and the child is better for a short time. The diet, however, is continued, soon to be followed by another attack and more worm candy.

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The physician is not consulted until the marked pallor and nervous state of the child attracts the parents' attention to the fact that something is wrong ; then they are amazed and horrified to learn that the improper use of food is the foundation of the whole trouble.

To consider even briefly the many disorders of the stomach in childhood would take more time than is allotted to this paper, however. Gastritis (acute and chronic), pyloric hypertrophy with stenosis, dilatation, gastrostosis, etc., are to be found in all their various types.

Take that period of childhood after the first dentition, and we will consider one of the most common diseases, chronic gastric catarrh. These cases are always attended by imperfect digestion, and as the food passes into the intestines in this state there is always accompanying this disorder intestinal catarrh. We will, however, consider only the stomach section of it. The long-continued use of imperfectly masticated, irritating, strong, highly seasoned food, in frequent and large quantities, sandwiched in between meals with ice-cream soda, soda water, ice water, ice cream, candies, cakes, etc., cause a thickening and chronic inflammation of the mucous membrane of the stomach, with marked hyperæmia, giving rise to a disorder not only as to the quantity but the quality of the glandular secretions. There are formed masses of tenacious mucus which so effectively block the secretory glands that gastric secretion is so enfeebled and altered that but little effect is produced on food. Ewald speaks of a mucoid transformation of the cells of the tubules, which may also involve the base of the gland. In the more chronic cases there is a degeneration of the cells, with atrophy of the mucous membranes.

The child begins to have irregular attacks of vomiting, and so insidious do the attacks appear that no particular food can be held responsible for them. As the attack usually appears at night, a few hours after the child has retired, the mid-day meal may perhaps be recognized in the vomit. After the greater part is thrown off the stomach there is more or less vomiting of a watery fluid containing small particles of food, intermingled with streaks of bile. A slight fever follows, the child is fretful for a few days, when the appetite returns and food is again taken, only to have a return of the trouble in a short time.

In these cases the symptoms are very prominent. The tongue is coated with a thin grayish covering, more dense at the back and over the papilla, which protrudes through the coating, enlarged and purplish in color. The ends and sides of the tongue are a bright red, the lips are parched, the facial expression is pinched, blue circles are under the eyes

and about the mouth, the eyes are bright with pearly sclerotics, the skin is dry and harsh, the stomach distended and tympanitic ; there is marked tenderness over the epigastrium, the child is nervous and cries upon the slightest provocation. The appetite is variable; there is craving for highly seasoned foods, especially those tempting to the eye. The pulse is quick and weak; there is frequent headache, and colicky pains are complained of. There is marked emaciation, and death may result either from loss of vitality through improper nourishment or from toxemia from the absorption of toxic matter in the intestines during an attack.

I find that the poor children and wealthy suffer in about the same ratio, for what the poor children get in the way of coarse and ill-prepared food the wealthy children make up in soda water, candies, and cakes. And here I wish to say a word in regard to ice cream and soda water. I do not believe there is a more potent factor than this mixture, which is given so extensively to children, especially in the cities, and which causes these catarrhal irritations. With hasty and frequent eating of highly seasoned and strong foods, imperfect mastication, hot bread, etc., in connection with the articles already mentioned, is there any wonder that chronic gastric catarrh is so frequent in children?

The history of the case, with a careful study of the daily regimen, is not likely to give rise to any difficulty in diagnosis. The prognosis is good if taken early and carefully guided through the many pitfalls which ever surround these cases.

Treatment. It is incumbent upon every practitioner to give advice to the parent in regard to the diet of early childhood. When the baby is born careful instructions are given as to the hours for nursing and how it shall be attended to in the various matters of babyhood, but as soon as the child is old enough to come to the table these matters are forgotten, and it is permitted to occupy a place with adults and eat everything they do, without a moment's thought of what the result may be. The diet of the child is all the more important now, for here may be laid the foundation for disease which may endanger its life or produce chronic invalidism. Careful training as to mastication is also as important as is the proper food for its health and development. A carefully written diet should be prepared and given to the mother, and those things which are harmful and useless should be pointed out to her.

When these cases present themselves to us for relief the first and most important thing is to improve the hygienic surroundings; give careful attention to clothing and a regular system of bathing. Select a

diet which will adapt itself to the most healthy part of the digestive tract, allowing plenty of time for the food to be digested between each meal.

It is impossible to lay down any fixed rule for these cases; they must be treated individually. A careful examination by test-meal or of the vomit will show the state of the gastric secretions, when proper food may be selected. The child should be kept in the open air as much as possible. All excitement and nervous shocks should be avoided. The child should be given daily baths of salt water, morning and evening, prepared either from sea salt or rock salt. Have the child stand in a foot tub and cover the feet with about four inches of very warm water, then sponge the body with cold salt water, pouring over the chest and shoulders. After the bath the body should be thoroughly rubbed with a harsh towel until the skin is in a red glow. The evening baths should be given just before retiring. Long hours of healthy sleep is important. Have a light flannel belt worn over the stomach, not only as a protection against atmospheric changes but as a support to the abdominal organs.

There is little to be accomplished by medication except possibly to stimulate the secretions of the gastric juices by some bitter tonic, such as nux vomica, condurango, tincture of rhubarb, infusion of quassia, gentian, etc. Gastric lavage should be used at least three times a week to remove the offending material in the stomach and the excessive quantity of the mucus. For this purpose I have recently devised and had constructed for me by Messrs. Max Woche & Son, of Cincinnati, Ohio, a special double current stomach tube, which very effectively removes the offending materials without any possibility of over-distention of the stomach. The patient should have warm alkaline drinks before each meal. During the attack nothing will answer the purpose better than a large dose of calomel followed by frequent and small doses of sedlitz powders. I usually divide one set of sedlitz powders into ten powders and give one of these every half hour until effect is realized. This readily removes all toxic matter from the intestines. I think that the use of the faradic current will produce the greatest amount of good in these cases.

With the above suggestions, in connection with a careful diet persistently carried out, we may be able to aid the development of stronger men and women, fewer heartaches, and fewer chronic invalids.

LEXINGTON, KY.

THE RATIONAL TREATMENT OF LOCOMOTOR ATAXIA.*

BY CURRAN POPE, M. D.

Consulting Neurologist Louisville City Hospital, Member of the American Medical Association, Mississippi Valley Medical Association, Kentucky State Medical Society, American Electro-Therapeutic Association, etc.

This disease is a primary degeneration of the sensory neurons located in the posterior columns of the spinal cord: sclerosis is purely secondary, so there is really no "choking" of the neuraxons, as heretofore previously held. Degeneration of the neuraxon occurs, leaving a space, and nature, abhorring a vacuum, fills in with sclerotic tissue. In passing it may be remarked as a disease of middle life, especially prone to occur in syphilitics (60 to 90 per cent), but it is not a syphilitic disease, syphilis predisposing the neural elements to degeneration by altering the physiological conditions. It occurs more in the intellectual and cultivated classes and in those subjected to causes producing leg-weariness.

It is my uniform rule to make a careful examination for this disease in every patient that has or complains of having had rheumatism, and it should be a rule to which there are no exceptions that patients who have had specific infection should be examined for tabes.

As soon as we have made a diagnosis of the disease I am of the opinion that the patient should be told what he has, owing to the length of time needed for treatment. He must be told that the disease is a serious one and that unless he wishes to become disabled he must follow a careful plan of treatment, which has for its purpose the arresting of the disease and restoration of function.

The question of stopping the occupation of a patient is a serious one, and in each case the decision must be individual. My plan is to decide the question on the following basis: if run down, weak, anemic, neurasthenic, etc., or if complications exist, to remove him from business and secure complete rest, treatment, etc., in my sanatorium, allowing him later to resume his old occupation or a new business. The occupation that he must follow should be one in which worry, care, and "leg strain" are reduced to a minimum. If he has been a busy, active man, and is at once removed from all possibility of ever following an active business or profession he is apt to become morbid, introspective, depressed, and irritable. He is perfectly willing, as a rule, to give up for a time, and his return to activity and work helps to pass the time and makes him forget his infirmity.

*Read before the Kentucky State Medical Society, Paducah, Ky., May 7-9, 1902.

The diet should be generous, and as far as possible no restriction placed upon it consistent with the state of his digestive capacity. It should be mixed, and one in which vegetables and fats predominate. Dairy products and especially milk and butter should be freely used. In some cases I crowd the nutrition by adding additional meals.

Much has been written with regard to the use of stimulants in these cases; it is best to give up tea, coffee, beer, wines, liquors, and tobacco, but extended observation has taught me that judgment must be used, especially in cases where there has been long-continued use of these articles. If moderate use does no harm we must remember that taking them away robs him of a great luxury. Rest is an essential element in the treatment of these cases. Early to bed and late to rise is a good motto; he should secure nine to twelve hours rest daily. In the sanatorium additional rest is taken after treatments. Very active walking must be avoided, and any strain upon the spine or legs is absolutely contraindicated. In fact all excessive corporeal exercise should be avoided, as in these cases the muscular fatigue sense is blunted. Of general exercises driving, in the worst stages, and golf during convalescence, are probably the best.

Care must be exercised in general hygiene. Cold should be avoided and warm clothes and underwear worn in winter, and when the ground is wet or slick gum shoes are essential. Corns should never be cut. In summer, light, cool underwear and thin clothes are necessary. The digestion, bowels, and kidneys must be regulated and plenty of water ingested. Laxatives are as a rule indicated, though the mechanical treatments usually overcome constipation.

Wherever the practitioner makes a close study of how to improve the general nutrition he will be rewarded, as it will aid the neural elements to better and more quickly assert themselves.

Medicinal Treatment. The first and most important question is that of antisyphilitic treatment. I have never seen the slightest good result from mercury in large or small doses, nor from iodide of potash in any dose, nor from a "course" at Hot Springs, but have had indisputable evidence of injury resulting from such treatment. One should bear in mind the experience of Brennen, of Hot Springs, who found the long-continued use of iodide of potash to not only increase the symptoms, but actually act as a causative agent. Nearly every case that I have seen has had such treatment and has invariably been injured. This is the observation of a host of European and American neurologists. The

only demand that exists for the use of rigorous antisyphilitic treatment is the presence of true syphilitic manifestations in skin, bone, and mucous membrane. Care must be taken to differentiate spinal syphilis from tabes. If a tabetic is given mercury, watch his color, hemaglobin, and weight.

The only drug that I have found useful, and that further experience has taught me is good for the disease process, is silver nitrate taken in one-sixth to one-fourth-grain doses three times daily, one or two hours after meals. The only tonics I have found helpful are iron, arsenic, quinine, cannabis indica, and the glycerophosphates. Strychnia, which is very frequently given, should rarely be administered and then in minutest doses, as it is apt to produce nervous erythrim and increase the pains. From the days of Brown-Séquard to date the serums have not shown sufficient result to justify or warrant their use or recommendation by any neurologist well acquainted with the disease. I use the following symptomatic treatment when needed: for pain, acetanilid, caffeine, camphor monobromate, and cannabis indica combined, or phenacetin, antkamnia and salophen combined, but general treatment helps the most. In the crises morphine is the best and only thing that will immediately check them, but it must be used with care and caution; of late heroin has proved of service in my hands. For the vesical retention and incontinence nothing equals the catheter, using sterilized water and antiseptics. Internally, hyoscyamus, buchu, and boric acid may be administered. The faradic current intra-urethrally gives excellent results. For amaurosis, one of the saddest occurrences of this disease, I use hypodermics of strychnia 1:100 cautiously increased or

Cyanide of gold and potassium, 20 cgm.
Distilled water, 10 cc.

Five drops of the above solution are injected into the back muscles and increased one drop daily until fifteen is reached; then stop a few days, recommence with fifteen drops and reduce one drop daily until five is reached, then follow with strychnia.

Mechanical Measures. It is now the consensus of opinion among nerve specialists that the patient must in this disease rely upon these mechanical forms for relief: Hydrotherapy, electricity, massage, gymnastics, suspension, and rest.

Hydrotherapy. I usually start my patients upon the use of the half bath. In this procedure the patient is seated in a large tub in about twelve to fourteen inches of water, at a temperature ranging from 85° to

70°, and steadies himself by holding to the sides of the tub. The attendant at once commences to rub the lower extremities vigorously, kneading and massaging the deeper structures as well as the superficial. At the start the duration is two minutes, increased a minute until five is reached. As a finish a large pitcher of water at 80° to 60° is poured down the spine. The spinal action may be enhanced by a previous salt rub. The bath is finished by hard friction with warm Turkish towels. The action upon the body of the agitated water accompanied by friction stimulates the peripheral nerves, dilates the superficial blood vessels, deepens respiration, increases oxygenation, and exercises a calming as well as stimulating effect on the sensory nerves, removing muscular and nervous debility.

Patients who react well, who have sufficient flesh, who are full-blooded and strong, may at once be placed with benefit on more active hydriatic procedures. My favorite plan is as follows: The use of the electric light bath until mild, sensible perspiration ensues, this to be followed by a spray or rain bath 104° degrees for two minutes, reduced gradually under a pressure of twenty-five to forty pounds from 70° to 60° as the patient progresses. The douche may be substituted and lower temperatures used. These applications should never be made by the patient himself, but by an attendant, and this be made in well-equipped sanatoria and hydriatic institutions where the bulky paraphernalia is at hand and where well-trained nurses and attendants follow the written instructions of the therapist.

The douche is a powerful stimulating procedure. Its effect fulfills and calls into action nearly every physiological function; it arouses and moves to healthy action the nervous centers, deepens the respiration, and increases the circulation in a way that excels all other treatment, hydriatic or otherwise. Its local action is a thermic massage.

Preceded by the electric light bath its action is much enhanced, as this bath of itself is active, vitalizing, and by its influence heat is collected on the surface, the sensitiveness of the skin enhanced, and reaction, which is always aimed at, is more easily secured. The douche can be administered at much lower temperatures owing to its mechanical effect, which increases the rapidity of reaction. Where low temperatures are used their application should be brief and patient's peculiarities carefully studied. The presence of a rosy skin, full pulse, sense of well-being, and increased activity show that its end has been attained. Winteritz, Leyden, and other foreign writers, after experience with thousands of

cases, regard hydrotherapy as the first among therapeutic measures in this disease.

Electricity occupies an important position, overpraised by some, sneered at by other critics; the most stringent opinions being passed by those who have never studied or used it. I place at the head of the currents static electricity.

I use the heaviest sparks to spine, extremities, epigastrium, and bladder, this to be followed by head shower or insulation. The sparks should be the heaviest possible and up to the patient's full toleration. Especial care should be devoted to anesthetic regions such as hips, feet, soles, etc. Of late I have been substituting the currents of high tension for the insulation and head shower, and have satisfied myself that it exercises a marked influence in improving the general nutrition, relieving the lightning pains and promoting a feeling of well-being. The next current I prefer is the galvanic. I generally apply same in two ways. (a) The cathode pole a pan in which the feet are placed; anode nape of neck or labile to spine for three to five minutes, using from ten to thirty milliamperes; then large pad over lumbar region for five minutes, using twenty to fifty milliamperes. (b) Cathode indifferent, electrode twelve by twenty inches on abdomen; anode nape of neck ten to twenty milliamperes five minutes; large pad six by eight lumbar region twenty to forty milliamperes five minutes. With this may be combined the faradic.

The rationale of the action of electricity in this disease is still unexplained and more or less empirical, but it has always seemed to me that, reasoning by analogy, if its action in other affections stimulates nerve nutrition, increases the circulation in the part, enhances elimination and promotes normal function, it is likewise true and applicable in this disease, and the pathological fact that degenerating nerve tissue must precede sclerosis may explain this action. In any event, speaking clinically, that it removes anesthesia, improves muscular tone, increases the circulation peripherically, relieves pain, strengthens the bladder action, and promotes well-being is true, and the daily observation of those who use it much in this affection. I am constrained to believe where used alone the results are not permanent, but when it is merely the part of a general system of treatment its action is enhanced and made permanent.

Massage and Suspension. For twelve years I have used massage in tabes and can speak highly of its merits, but to secure lasting benefit the patient must persist in its use for a long time. I personally much prefer

the mechanical variety and have supplanted the manual by its use. I know of no one agent of which patients speak so highly as this, and my observation has been that general weakness, lassitude, asthenia, knee weakness, leg tire, cold extremities, muscular hypotonia and digestive disorders, especially constipation, disappear under its use. I have seen the pains disappear during its application. At the start the treatment is made light, and gradually the time at the different machines is increased until thirty to forty minutes of active treatment is given, the machines being run at a rather high rate of speed and the vibration being marked. I am satisfied that massage is a remedy that will materially increase sensation and assist in relieving anesthesia, and such removal has been noted by Fuller, Schreiber, Türk, Langenbach, Graham, Granville, Erb, and Ziemssen. The rationale of massage has been entered into by me thoroughly before (Mechano-Therapy, Louisville Journal of Medicine and Surgery), but a short résumé here may not be amiss. In these cases, where the blood and secretions are thick, the circulation sluggish, the nerve centers torpid, sensibility deficient, the special senses blunted, massage is invaluable. Tissue metabolism and elimination being impaired, the effect of massage is to stimulate the cell changes and nutrition and to improve the lymphatic and venous circulations, leading directly to improved excretion.

Massage stimulates the medulla and exercises a beneficial influence over all the vital functions. It is particularly helpful in diseases of degeneration and devitalized conditions.

Suspension no longer creates the same furor that marked its advent some fifteen years ago. The writer recalls, while studying in Paris, the claims then made for it by Prof. Charcot and the French school, and the hopes it held out. That it has more or less fallen into desuetude is true, but in about ten to fifteen per cent of selected cases it certainly helps the pains and seems to improve the gait. It is only to be considered an adjunct of other systematic treatment.

The main difficulty, handicap, and burden of the ataxic's life is the question of locomotion. Allow him the use of his extremities and he may lead a useful and ordinarily active life, but when he reaches the stage of canes, crutches, and a constant attendant with an invalid's chair life holds little that is bright and rosy, and just at this time he becomes most despondent, hopeless, introspective; his strength of will, fortitude, and hope deserts him and he resigns himself as patiently as he can to the inevitable, and awaits the release the grim monster of hour-glass and

scythe brings. The essential basic element of exercises and gymnastics is the directing of them purposely by brain action. That is to say, these movements are performed with definite purpose and intent, the attention concentrated upon them, and by so doing the sensori-motor cortex becomes reëducated so that the movements become easier and easier and are finally performed without conscious attention and conscious will power. Fraenkel truly called them "cerebral gymnastics." These movements do not require force and power, but aim at acquiring dexterity and skill, and each endeavor must be marked by methodical and exact execution. The patient usually commences with the simplest of movements, and as soon as these can be done well and accurately moves on to more complicated ones. Interest, snap, and closely concentrated attention should mark their performance. I have seen patients who could only walk with canes and crutches much benefited and able to lay them aside after several months' exercises in combination with the treatment above outlined. These exercises are not curative of locomotor ataxia, as many seem to believe, but serve to overcome the ataxia. Contraindications are the acute cases with much pain and crises; in severe athroopathy and fragile bones; in markedly run down and anemic patients. Successful use of these exercises demand much time on the physician's part, a careful study of the patient's capacity, the ability to enthuse active coöperation, and a thoroughly trained assistant and gymnasium. They should be practiced once or twice daily, but never until fatigued. As ataxia of the lower extremities is much more marked, so it is much more difficult to overcome, because of the supported body weight and the more difficulty in overcoming the upset and disordered equilibrium. I have selected and use the following exercises, which my experience has taught me to be valuable and which have been taken from the plans of Fraenkel, Goldscheider, Leyden, Hirschberg, Dana, and others, and besides a few of my own added.

PLAN OF TREATMENT.

First Stage Treatment. Rest in bed late in morning; 9-10, mechanical massage, followed by rest until middle of day, either in bed, on sofa, or in chair; 1-2, hydrotherapy as per forms suggested, followed by rest; 3-4, general faradism and exercise of muscles, or galvanism to spine as suggested; 7-8, static electricity; abundant diet, laxatives as needed, I., Q. & S. tonic.

Second Stage Treatment. Gradually allow the patient to get up, remaining up longer each day—now add the exercises gradually on this plan; rest in bed until after breakfast, massage mechanical, heavy; hydrotherapy at mid-day, exercises in afternoon, static and galvanic at night (one or the other).

Third Stage Treatment. Up going about, attending to business; exercises morning and night, or at sanatorium.

Daily Treatment at Sanatorium. Mechanical massage, followed by static electricity three times weekly; galvanic three times weekly, or mechanical massage followed by static electricity twice weekly; half bath twice weekly, galvanic twice weekly.

GYMNASTICS AND EXERCISES.

For Hands and Arms. (*a*) Sit in front of a table, place hands on it, elevate fingers separately, raise hand slightly, extend and flex each finger; (*b*) hands on table, spread fingers, contract them; (*c*) dozen pennies on table, make a stack, taking one at a time; (*d*) spread pennies on table, touch each one slowly with forefinger of each hand; (*e*) board and marbles, put marbles in holes; (*f*) "peg board," put pegs in holes one after another; (*g*) swing balls of different sizes, oscillate, and while moving seize large balls first, smaller ones last.

(1) *Legs.* *A.* Bed exercises for legs—patient lying on his back in bed: (*a*) flex leg on abdomen and make stepping movement; (*b*) raise leg as a whole, flex, then extend fully; (*c*) ladder climbing, making accurate climbing and stepping movements. *B.* Chair exercises: Rise slowly from chair without aid (as soon as possible) then sit slowly; sitting in chair, flex legs, and make stepping movement; raise leg as a whole, flex, then extend fully; "pegging," first touch round top short pegs, then flat top taller uprights. *C.* Parallel bar exercises: Hold to bars and flex legs; hold to bars and walk back and forth and sideways; make various movements, touching spots, drawing circles, etc.; obstacle walking.

(2) *Drill.* (*a*) Patients walk heel and toe, body erect, soldierly attitude, a black line twelve inches wide; (*b*) same, walking line six inches apart; (*c*) same, walking on line twelve inches wide and placing foot exactly on large white transverse lines, thus giving soldiers' regulation step; (*d*) same, on line six inches wide; (*e*) side stepping, placing feet exactly, first on small transverse lines, then on larger; (*f*) side stepping, placing alternately right and left foot exactly in painted footprints; (*g*) foot on center dot, drawing circles with alternate limbs, especially toes;

(*h*) walking zig-zag lines, turning promptly and returning to starting point; (*i*) "right face" exercise, keeping on footprints; (*j*) "left face" exercise, keeping on footprints; (*k*) "setting up" movement (useful and difficult), raise leg as high as possible, flex same, bringing toe down on large transverse white line, using alternate legs and progressing along the line; (*l*) stand feet wide apart; (*m*) stand feet together, count twenty, increase until one hundred is reached; (*n*) advance one foot the length of small transverse white line, bring other up; (*o*) balance on one foot; (*p*) obstacle walking (over different things placed on the floor, blocks of wood); (*q*) stair climbing; (*r*) stand with feet apart, hands on hips, flex limbs, stoop as low as possible, rise slowly; (*s*) walk backward along lines; (*t*) feet apart, raise arms from side until they meet above head, carry them forward and downward, bending the body until the tips of the fingers come near the floor; (*u*) feet apart, hands on hips, make circle with head.

CONCLUSIONS.

The disease can not be treated by the general practitioner owing to lack of apparatus, time, etc. Cases must not be considered hopeless; even the most severe can be helped. Cases must be treated as above outlined and the treatment persisted in, not for weeks, but for months. The sooner a tabetic becomes a philosopher about his disease and determines to earn relief, benefit, and symptomatic cure, the better for him. Until recovery has taken place the physician must exercise close supervision over the case, and relaxation of treatment is always followed by relapse or retrogression. Even where the ataxia is so great as to require support in walking, or when locomotion is almost impossible, most helpful results may be obtained. I have cases that walk so well that no one could detect anything amiss. A gain in weight, strength, nerve force, blood, together with a relief of the more or less neurasthenia and phobia that accompanies the disease may be counted upon. Patients will also gain hope, courage, and become much more content and happy, to say nothing of the comfort that return to business and work insures. Where patients are put to bed, sufficient food, rest, etc., should be given until they gain in blood count, flesh, and strength. Improvement under this system is usually felt from the first, and varies in its rapidity depending on the intelligence, patience, and persistence of the patient, the general health, and the stage of the disease. The results of exercise and treatment are permanent if general health remains good. Cases of slow progress toward recovery are the best, as they tend less toward relapse,

pains, etc. False hopes of speedy cure should not be held out to the patient, but he be made to plainly understand that, while his disease is a very grave one, he is not a hopeless sufferer, and that by patient, steady and conscientious work on his part, constant supervision, direction, and guidance on his physician's part, relief from suffering, amelioration of symptoms, and arrest of the disease will ensue. There are in my opinion no class of sufferers so appreciative of relief as those now under consideration, and sympathy, patience, kindness, and the best efforts of the physician should be directed toward sustaining them in the hour of their affliction. They should be imbued with the fortitude, patience, and strength that are the best attributes of humanity, while receiving the most advanced and scientific treatment that the profession can afford.

I am more and more impressed each day with the necessity of an extended and exhaustive examination of every case, carrying it as far as sputum, blood, and urine. Resulting benefit and more accurate and satisfactory work will be done if this is followed out, and indications for treatment found which were never suspected. Persistent treatment is absolutely essential, and unless the patient is willing to undergo a thorough course I am not desirous of taking his or her case. They must be counseled to patience, and to endeavor in every way to assist the physician. I never allow patients to take baths away from my establishment. I have tried this and failed. It seems impossible for them to take properly the simplest bath. The temptation to take what to them is most agreeable, regardless of the results, and the lack of precision in duration, temperature, rest, etc., will in the end accrue for bad rather than for good. I have and make rules for these cases and insist upon patients following them out, and it is an essential factor of the treatment. You may have considered me a pessimist in the matter of drug taking, but I am not. Drugs have their place and uses, and I do not hesitate to use them at such times and places; but in chronic diseases, and especially in nervous diseases, their use alone is nearly, in my opinion, useless. We have no specifics for this disease, and the sooner the overtaxed stomach is relieved the better. Iron often fails in anemia for the simple reason that it can not be assimilated. Yet withdrawal, the use of easily digested food and hydiatic measures soon place the patient in a position to assimilate and utilize this drug. The position here taken is, I believe, the true position the profession will soon take, and it is only justice to say that the criticism indulged in is the outgrowth of observation and the result of experience, and is stated with the firmness of conscientious belief.

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SMALLPOX IN KENTUCKY AND INDIANA.

Recently there has been much said through the secular press about the action of Dr. J. N. McCormack in sending the family of Mr. Porter, of Bowling Green, to the pest-house on account of one of his children having smallpox. Whatever may have been said by the lay press concerning this particular case (and much was said by it that should not have been said), the fact remains that Dr. McCormack not only did his duty, but did it without being forced and coaxed into it. Smallpox is no respecter of persons, and neither should a public officer be. The rich and the poor should fare alike, and in this instance Dr. McCormack has won the esteem and good-will of all fair-minded persons by enforcing the law with his most intimate friends and patrons, who became offended at his course when the law was applied in their own case.

It is to be hoped for the good of the public that Dr. McCormack's action may serve as an object lesson to those who become afflicted with smallpox, and also to those whose duty it is to see that the health laws are rigidly enforced. The State has already been compelled to spend thousands of dollars as the result of gross carelessness on the part of certain health officers and certain county judges who have refused to act when it was their plain duty to do so. The smallpox situation

both in Kentucky and Indiana has greatly improved, and it is hoped by the time winter sets in that it will be pretty well wiped out.

Gov. Durbin, of Indiana, seems determined to pursue a course which, to all fair-minded people, is not only detrimental to the interests of his own State, but that of neighboring States, to say nothing of the suffering that is daily increasing among his people. It is the plain duty of Gov. Durbin, as Governor of Indiana, to supply the funds, which are now at his command, to aid in stamping out this loathsome disease.

The good people of Indiana are reasonable and tolerant, but Gov. Durbin has gone his limit, and will be held reponsible from now on for the progress of smallpox in his State unless he puts up the money, as he should, to stamp it out.

Current Surgical and Medical Selections.

THE CRUELTY OF FOIE GRAS.—The sentimentalists who devote so much energy toward the suppression of experimental scientific research conducted upon the lower animals will find an abundant harvest of absolute wanton cruelty on every hand if they care to look for it. How many antivivisectionists, we wonder, eat foie gras? Do they know that it is made from the diseased livers of geese which are deliberately brought to death's door by treatment that is diabolically cruel? The unfortunate birds are cooped up indoors in boxes so arranged that the head alone can be moved. They are then crammed with a rich diet, which is forced down their gullet. Under these circumstances the liver becomes quickly affected, and in about three months has attained an enormous size from fatty degeneration. The larger the liver the more successful the process. The most valuable livers are those of a green tint; that is to say, fatty livers impregnated with bile pigments. The center of this trade is Strasburg, which sends out annually about \$750,000 worth of this delicacy. A recent petition to the civic authorities of London to exclude foie gras from the banquet recently given to the Prince of Wales has excited the liveliest alarm among the merchants of Strasburg, inasmuch as, after Paris, England is their best customer. Three months of forced feeding is required to bring the unfortunate birds to the proper pitch of organic degeneration, so that their livers may tickle the palate of fat gourmauds. Of a truth, any antivivisectionist who eats foie gras is committing an act of farcical incongruity. On the one hand he is eating a toothsome morsel procured by a course of prolonged torture practiced upon a harmless domestic fowl, while on the other he is railing at scientific men whose aim in experimentation is the highest conceivable, namely, the alleviation of suffering among mankind. Meanwhile, Strasburg flourishes and science is tied hand and foot in the United Kingdom.—*Medical Press.*

THE PLACE OF SYMPHYSEOTOMY AS CONTRASTED WITH CESARIAN SECTION.—Jewett writes on this theme in *American Medicine*, and reaches the following conclusions:

Symphyseotomy is still a useful operation within a limited range of pelvic contraction.

It is suited to conditions in which only very little additional space is required for delivery.

It is a valuable resource, therefore, in cases in which forceps unexpectedly prove inadequate.

Axis traction forceps with the aid of posture should always be tried before resorting to symphyseotomy.

Its results would be much improved by restricting it to pelves with a conjugate of not less than 7.5 centimeters (3 inches) in simple flattening, or 9 centimeters in general contraction.

Under equally favorable conditions its total mortality should be no greater than that of Cesarian section.

When the pelvic space permits, it should replace the Cesarian operation in the presence of exhaustion.

It may be elected primarily as an alternative of Cesarian section when the operator can be assured that the degree of obstruction is well within its safe limit. Here the choice of operation is a matter of individual preference.

Within its proper field symphyseotomy is better than Cesarian section for an operator of little experience in abdominal surgery.—*The Therapeutic Gazette*.

TREATMENT OF ACCIDENTS UNDER CHLOROFORM.—In the course of an editorial on this subject the *Medical Press* of September 4, 1901, says that the indications for treating such accidents are threefold—to remove the anesthetic-laden air from the lungs, to encourage the flow of blood to the nerve centers, and to stimulate the circulation and respiration. The various methods which are used to attain these ends Mr. Wilson groups into five classes: (1) External reflex respiratory stimulants; (2) direct mechanical or electrical stimulation of the heart; (3) the mechanical performance of natural functions such as artificial respiration; (4) mechanical measures designed to counteract the effects of the failure of the circulation by raising the general blood-pressure; (5) drugs administered to stimulate the depressed nerve centers. Of the first group, the best that can be said is that they do no harm unless persevered in to the detriment of more important measures, and of the second, that they are either impracticable or positively harmful. Faradic stimulation of the precordial area, if any of the current reaches the heart, probably inhibits its action. Acupuncture of the heart is equally useless, and direct manipulation of the heart, after opening the heart-chest, is a remedy which requires more evidence of its utility before it can be recommended. Mr. Wilson believes that as good, if not better, results can be obtained by intermittent pressure on the chest wall, accom-

panied by alternately raising and lowering the patient so as to empty and fill the heart. The difficult question has first to be decided whether the circulatory failure is the result of paralytic dilatation of the heart, or of paralysis of the vasomotor mechanism.

The methods of treatment suitable for each of these cases are absolutely antagonistic, and it is by no means easy to say which is the cause in any given case. It would appear that sudden failure of the circulation, accompanied by pallor of the face and accelerated or gasping respirations, denotes vasomotor paralysis and requires inversion of the patient, with pressure on the abdomen. On the other hand, if the dangerous symptoms are preceded by struggling, and the face is suffused with signs of venous engorgement, the patient should be alternately raised to nearly the vertical position in order to empty the heart, and then returned to the horizontal position. Artificial respiration should be systematically persevered in in each case. If there is actual failure of the circulation little that is useful can be done by efforts to raise the blood-pressure by such means as transfusion, etc. The same objection also applies to the use of drugs. Where there is failure of the respiration or circulation the difficulty is to get the drug to the nerve center which it is to stimulate. In those cases in which this can be effected hypodermic injections of strychnine and the extract of suprarenal capsule, with inhalation of ether, are probably the most useful.—*Ibid.*

SURGERY OF THE LUNGS.—From a study of two cases of pulmonary gangrene, two of pulmonary abscess, one of pulmonary cavity, one of bronchitis, and one of subdiaphragmatic abscess treated by surgical measures, Sapiejko (*Revue de Chirurgie*) concludes that incision of the pleura, of the lung, and even of the diaphragm, in cases of subdiaphragmatic abscess, may lead to a favorable issue if pleural adhesions exist; and these are present in the majority of cases in which suppurative processes occur in the lungs. It is of the highest importance to determine the exact situation of the pleura adhesions, through which the way toward the focus of disease is shortest and least dangerous. This may be done by introducing through a small incision in the skin a dull, hollow, fine-shaped needle, connected with a glass tube bent twice on itself and filled with sterilized physiological salt solution. In the absence of adhesions the negative pressure in the pleural cavity will cause the fluid in the tube to move toward the chest, and in their presence the fluid will recede. In the former event the formation of adhesion can be superinduced by injecting concentrated solutions of silver nitrate, formalin, potassic hydrate, etc. The lung may be incised with an ordinary bistoury, and the resulting hemorrhage is usually controlled by packing.—*Indian Medical Record.*

EPILEPSY AND YOUTH.—Nearly 85 per cent of all epilepsies develop before adult age is reached, and about 14 per cent of cases are distinct heritages from epileptic parents.—*Exchange.*

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

ELECTRO-THERAPY REVIEWED BRIEFLY: HISTORY, PROGRESS, REMARKS.

BY JOSEPH W. IRWIN, M. D.

*Professor of Neurology, Practice of Medicine, and Clinical Medicine in the Kentucky
School of Medicine, etc.*

The earliest account of electricity we have was given by Thales, of Milétos, six hundred years before Christ. He found by rubbing plates of amber with a dry cloth that they attracted straws and light bodies. Theophrates, three hundred and twenty-one years before Christ, also observed that rubbing amber plates showed there was some force at work which had not yet received a name.

Pliny, seventy years after Christ, demonstrated the effect of magnetism, and amber necklaces were worn for their medical effect in his time. Scribonus Largus, a physician in the time of Tiberius, prescribed magnetism for the cure of gout. It is supposed that magnetic healing was known for centuries before to the negroes of Western Africa, as they dipped their sick children in the water where the magnetic fish frequented—especially the torpedo fish—for the cure of diseases. It was believed to be from this source that the idea of voodooism, subsequently called hoodooism, and all other such isms following to the present time, have sprung.

The magnet was first discovered in magnetic ore—the magnesian ore in Asia Minor—and it forms to-day one of the great forces in electrotherapeutics and the chief force in mechanical electricity. The mariner's compass was introduced into Europe in the twelfth century,

but it was known to the Chinese in the fourth, so their knowledge of magnetism or electricity antedates that of any country of Europe.

Matteucci and DuBois Reynolds, in 1733, investigated animal magnetism in man, and found that there were certain parts of the body negative and other parts positive; for example, they found that the hand and arm to the elbow were negative, while from the elbow to the shoulder was positive. Reynolds especially found that magnetic currents permeated the muscles of animals, and that the same force was not confined to the muscles alone, but was also found in the nerves.

Some discussions arose as to the methods pursued in making these discoveries, and some doubts were thrown upon the researches of Reynolds; nevertheless, his theories have held a high place in the early study of animal electricity.

Not much was done in the development of electricity until about the year 1790, when Volta, a professor in Padua, Italy, was operating an old-fashioned electric machine and bringing sparks from it. On a table alongside the machine were some dressed frogs; sparks from the machine caused the frog legs to jump, which gave rise to the belief that the dead muscles contained magnetic force. Assisted by his friend Camilla, Volta strung the dead frogs on a railing and attached one leg of an iron hook to the spine of the frog and the other to the leg, which caused muscular contractions. His ideas were published a few years later and received wide attention.

Fabroni, a professor in Florence, Italy, in 1792, was the first to suggest that the action between the iron hook and the frog was chemical, and that the movements were due to the destruction of matter. Volta soon after constructed what is known as the Voltaic pile, which bears his name, and this was the first attempt to construct a chemical battery. The pile consisted first of a disc of copper on a base of wood; then a disc of woolen saturated with some acid; then a disc of zinc, and these successive discs were placed one upon another until the pile was made a foot or two in height; then force was obtained from it by attaching one pole to the zinc plate and the other to the copper plate, obtaining from the zinc and copper the idea of the positive and negative poles.

Columb advanced the theory that all animal cells had magnetic force, and that every cell had its positive and negative pole, with a neutral zone in the center, just like the original magnet or loadstone

itself. Each pole has what is known as a positive and negative end, whether it be magnetic ore, a piece of soft iron, or steel.

Stephen Grey, in 1827, first conceived the idea of conduction and insulation. He took seven hundred feet of wire and strung it upon silk loops; then to each end of the wire he attached a glass rod; he found that by rubbing the rod at one end electrical disturbance was observed at the other. Then he strung the wire upon iron loops and found that by rubbing the glass at one end there was no manifestation at the other, showing that the iron had allowed the force to escape, hence the difference between insulation and conduction, the silk being an insulator and the iron a conductor. This was important information touching the use of electricity.

Faraday's researches appeared in 1831. He was the first to make practical use of electricity by induction, and it has received the name of its discoverer, hence faradization. In 1836 Daniell, of Dublin, made a chemical battery consisting of a disc of zinc and one of copper, immersed in an electrolyte composed of a solution of sulphate of copper. His cell contained from sixteen to twenty ounces of fluid. The zinc in the cell was positive and the copper negative, while the attachment to the copper was the positive pole outside and that to the zinc the negative, showing that the force was from the positive to the negative element in the cell, and from the negative to the positive outside. The amount of force generated in the Daniell cell is known as one volt, and it is to-day the gross unit of force in electrical terms. He then attached one hundred metres of a No. 24 copper wire to this cell, and conducted the force from the cell to the other end of the wire, but found in so doing that the force had lost strength and that there was not as much electricity at the other end of the wire as at the cell.

Ohm, of Nuremberg, in 1827, conceived the idea which is known to-day as the Ohm law, and applied it in this case. He showed that the wire required a part of the force for saturation, the elements in the cell required saturation, the electrolyte (or fluid in the cell) required saturation, and all the connections required saturation, and that a certain amount of force was lost by atmospheric induction, and that by reason of these facts the gross amount of electricity generated in the cell could not be delivered at the distal end of the wire; so the amount of waste is known as one ohm of resistance.

Then came another illustrious scientist, Ampere by name. He saw that Ohm's view was the correct one, and after conducting a series of

careful experiments he gave his name to the net quantity that could be used for medical or mechanical purposes at the distal end of the wire. Briefly, the unit of electric force generated in one Daniell cell is one volt, the gross quantity.

The unit of resistance, consisting of the amount of electricity necessary to charge the one hundred meters of wire, the electrolyte and connections, is one ohm, and the net quantity of electricity given over at the end of one hundred meters of a No. 24 wire which may be utilized for medical or mechanical purposes is known as one ampere. Thus electricity is spoken of to-day, and will for all time be known by these terms.

A scientist by the name of Weber gave the net quantity his own name, and in mechanics the net quantity is called an amp-weber. The electro-motor force is frequently referred to as an electric current or electric fluid, meaning one and the same thing. What this force consists of we know not; this much we do know—we study it from its manifestations, and we know that destruction of matter generates this force. There are two forces in a magnet: one pushes, the other pulls.

We find the galvanic battery contains a force identical, so far as we are able to determine, with the force in the human body. During sleep this force is being generated in the brain, the cells are recharged and made ready for use on the following day. We awake in the morning with our thoughts clear, and this feeling, no doubt, is due to the multitude of cells on the surface of the brain being full of electric energy. The first hours of the day, no matter how heavy our labors, we are at our best, but as night comes on the supply of electric energy is exhausted; therefore, sleep becomes a necessity. It is nature's great restorer of lost energy.

Studying from cause to effect, we have many reasons to believe that the electric and brain force is the same thing. The wires conducting force from the battery correspond in a rude way with the nerves of the human body; the motor nerves come from near the surface of the brain; each filament is inclosed in a sheath of its own. These nerve filaments, fifty or more, are held together by a dense fibrous covering known as the neurilema. Thus the nerve sheath or outer covering represents the silk insulation or covering of the wires in the rheophores.

We find in the rheophore fifty or more wires, each one wrapped closely with silk so as to prevent the electric force being lost. Nature

has provided the nerve with a dense fibrous covering; were it otherwise the mandate sent out from the brain to the hand or foot, or to any special part of the body, would lose its force on the way to the point of destination.

The galvanic battery has a positive and a negative pole; the positive pole is known as the anode, the negative the cathode, so when we wish to cause alterative effects or chemical effects we apply over a negative part of the body the anode and apply to the part diseased the cathode. On this principle we do what is known as electrolysis.

If we wish to remove a hair we insert at the root of the hair a needle attached to the cathode, insulated up almost to its tip; then we use a given amount of electric force and soon a little bubble of gas will appear around the root of the hair. When the root of the hair is thus destroyed it is removed.

Tumors have been removed in the same way as hairs, by applying the positive pole always over a negative point, which means a point where there are few local nerves, and to the tumor applying a needle or an electrode attached to the cathode. Large tumors, the size of a child's head, have been dissolved by this current, so it is quite a positive alterative. The galvanic current is said to have another effect, which is that it polarizes all the cells that may be between the anode and cathode; that is to say, it turns the positive pole to the negative or the negative to the positive; it rearranges any that may be out of place and in this way restores healthy function. It is from the cathode or chemical pole of the battery that the Röntgen (X) ray has received its name.

Of recent years humanitarians have resorted to the use of electricity as a kind substitute for the gallows, in the hope that they have found the answer to the query:

Is there no calm, no gentle way
To mingle kindly with our fellow clay?

The suffering of the criminal is left to the imagination, and all we know is that the period is of incalculably short duration. Since the discovery of the incandescent light, mechanics have devised numerous instruments and appliances by which we are enabled to ascertain with far greater precision the diseases, injuries, and displacements of internal organs. Chief among the inventions are the gastroscope, the cystoscope, the urethroscope, and the rectoscope. We are indebted to the telephone inventor for the phonendoscope.

The X-rays, the latest great discovery in electrotherapeutics, has already been applied to a wide range of diseases with reasonable expectation that the number will become greater. When we review its history and the relief it has already afforded to suffering humanity the wonder is that the thought which gave it birth remained dormant for so long a time.

Russell, of England, in 1836, first suggested the possibility that a valuable occult force would be found in the wake of the cathodal ray, but it remained for Röntgen, of Germany, sixty years later, to discover and put into practical use this important force. This new power, still in its infancy, has already brought to light the diseases, displacements, and injuries of the internal organs. Fractures and dislocations of the bones and joints are made clear as to extent and numbers. Tumors and foreign bodies in every part or texture of the human frame (except some of those beneath the calvarium) have been brought into view. Former methods of electrolysis have been replaced by the use of the X-rays. Extraneous hairs and nevi have been successfully removed without pain—cures of lupus have been reported from the use of the X-rays—more recently tumors of every description and hyperplasias have yielded to the cathodal rays. Reports from those in authority as to the use of the X-rays in cancers are all decidedly encouraging, and to the effect that tumors, both benign and malignant, yield to the occult force. It is also believed that time will reveal greater benefits in this direction.

The result of experiments on pulmonary consumption and tuberculous diseases with the X-rays has renewed hope that the tubercle bacillus has met its direst enemy. The wondrous effects of electricity upon seeds, growing plants, and animals that have been recorded by scientists are such as to cause the hope that this great force may some day, not in the far distance, be carried further into the domain of life. May it be not possible by the use of so great a power to rearrange the deviating cells and twisted neurons of the brain, and replace wasted power in those mentally defective and irresponsible for their acts? Let us hope on, and believe that in time some Franklin or Newton will appear on the scene with a matured method by which electricity may be used to restore healthy functions to all of the automatic occult forces within the disordered human brain.

VERSION.*

BY WALKER B. GOSSETT, M. D.

Instructor in Obstetrics in the Louisville Medical College; the Visiting Physician to the Morton Church Home and Infirmary; Ex-president of the Louisville Society of Medicine; Charter Member of the Phi Chi Medical Fraternity, Alpha Chapter; President of the Students' Obstetrical Society of the Louisville Medical College.

Version is an operation by which we change the position of the fetus in utero. The object of version is to substitute one of the fetal poles for some other presenting part. Version is divided into cephalic or podalic.

“Turning of the child in the uterus is one of the oldest obstetric operations, for it was known in the time of Hippocrates, whose comparison of the fetus lying transversely to an olive similarly placed in a bottle is so well known; but the great master committed a sad error in teaching that the fetus could not be delivered unless the head came first, an error which though some centuries afterward Celsus corrected still ruled, sustained as it was by the great name of Galen—for who could dispute what Hippocrates and Galen taught?—until soon after the invention of printing in the fifteenth century (1596), and then the illustrious French surgeon Paré established for podalic version its legitimate place. Guillemeau, the friend and pupil of Paré, advised turning by the head or by the feet in case the placenta came first.

“The famous Louise Bourgess recommended podalic version in prolapse of the cord and also in case of uterine hemorrhage during labor, and then extract the child by the feet, saying that it was necessary to rupture the membranes as one forces an entrance into a burning house in order to save it.

“Until the invention of the forceps, and the knowledge of this instrument became the property of the profession, podalic version occupied a most important place in obstetrics, and turning by the head sank into comparative neglect, for prior to possessing this instrument the accoucheur was powerless to end the labor though he had brought the head in a favorable position.

“Among the aboriginal tribes of Mexico a curious custom prevailed in cases of difficult labor. A woman was seized by the feet, suspended head downward, and vigorously shaken. If the dystocia was due to a transverse position of the fetus in utero this rough and unscientific treat-

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ment might in a certain number of cases be effective, and it was, no doubt, in consequence of a few successes that the custom had its origin.

“In Japan, before the country had reached its present high stage of civilization, it was customary to apply massage to the abdomen of pregnant women in order to straighten out a possibly faulty position of the fetal ellipse. In many primitive races some form of version has been and is in vogue, handed down as a custom of ancient origin.”

Cases in which version may be required : (1) Transverse presentations ; (2) contracted pelves ; (3) cases in which rapid delivery is necessary, provided delivery by the forceps is not safe or practicable, as in placenta previa, rupture of the uterus, prolapse of the cord, convulsions, tedious labors, and puerperal hemorrhage, etc.

Choice of version : (a) When correction of a malpresentation is all that is required, and circumstances do not render subsequent immediate delivery necessary, a cephalic version may be performed ; (b) when a rapid delivery is necessary, perform a podalic version.

Before performing version the operator must have a true mental picture of the position of the fetus in utero, and he must have a personal knowledge that all the necessary preparations for the various emergencies which may arise are at hand.

There are three ways of performing version : (1) External manipulation ; (2) combined manipulation ; (3) internal manipulation.

The operation of version by external manipulation. It is used mostly for the correction of a transverse presentation, either before the labor begins, or the labor having begun then before the liquor amnii has been discharged, or as soon thereafter as possible, while the child is easily movable.

To perform the operation the woman should be placed on her back, with the thighs flexed ; uncover the abdomen ; then with the flat hands—one over the child's head, the other over breech—gently push the head toward the pelvic brim and the breech up toward the fundus uteri. Manipulate only at interval of pains ; if the pains come on, stop manipulating but hold the child firmly enough to retain any degree of change in its position already gained. When the child slips around into its right position rupture the membranes, if the labor has begun, that the uterus may contract and keep it there. Now, if the labor has not begun, place two pads—one on the side of the uterus high up against the breech, the other on the opposite side lower down against the head—and retain them with a binder.

The operation of version by combined manipulation. This method was first proposed by Bush and Dr. Wright, of Cincinnati, and was later advocated by Braxton Hicks, of London. This is the second least dangerous method; it is to be tried after external version has failed. Thus in head presentations the operation comprises three steps, viz.:

1st. The fingers inside, lift the head toward that iliac fossa toward which the occiput points, while the hand outside depresses the breech along the opposite side.

2d. The fingers inside can now touch the shoulder or sternum, and they push or lift it in the same direction as the head. The hand outside still depresses the breech. The breech and knee are now within reach of the fingers.

3d. Grasp the knee—the membranes, if unbroken, may now be ruptured—and pull it down, while the hand outside changes its position so as to push the head up toward the fundus. The foot may now be reached, and case managed as a footling or breech. In cephalic version the fingers inside will push the shoulders in the direction of and after the breech; the hand outside depresses the head.

The operation of version by internal manipulation. This operation is comparatively easy before the waters have escaped and when the uterus is not rigidly contracted around the child.

Conditions necessary before this operation should be attempted, viz.: First, the pelvis must be of sufficient size to admit the delivery of the child; second, the os uteri must be dilated or dilatable; thirdly, the presenting part must not have descended so low or become so firmly impacted in the pelvis that it can not be pushed back above the superior strait without risk of lacerating the uterus.

Cephalic version by the internal method is not now performed.

The operation of podalic version by the internal method. This operation comprises three steps, viz.: (1) Introduction of the hand and grasping the feet; (2) turning of the child; (3) extraction of the child.

The first two steps are to be proceeded with only during the interval of the pains; when a pain comes on hold the hand still, relaxed and flat, thus avoiding the risk of rupturing the uterine wall with the knuckles. The third step is performed during a pain.

The woman is placed on her back, the hips brought to the edge of the bed. In these cases complete anesthesia is required. The operator should have his arm bare to above the elbow and anointed with vaseline, etc., on all parts except the palm of the hand. Use the hand

whose palm corresponds to the abdomen of the child. The finger ends are brought to a cone and introduced into the vagina in the axis of the pelvic outlet, back of the hand to the sacrum.

Introduce the hand into the uterus in the axis of the brim, while the other hand is outside making support and counter-pressure. With the thumb between the head and pubes, and the fingers between the head and sacrum, the head is grasped and lifted out of the way; the wrist resting against the forehead keeps it in position. Pass the hand on up, grasp the feet, one or both, and then turn the child. (Second step.) Should the membranes be unbroken they should be ruptured when the hand passes by the head into the uterus.

Where to find the feet: "Use the right hand for right presentation, and left for the left. In a right lateral presentation, when the position is a dorso-anterior, the feet will be found toward the right and posterior part of the uterus above the right sacro-iliac synchondrosis. So pass the right hand along the hollow of the sacrum to the right and higher up of the promontory and grasp the feet. In a dorso-posterior position of the same right lateral presentation the feet will rest toward the left and anterior part of the uterus above the left acetabulum. So pass the right hand directly up and grasp the feet behind the pubes and acetabulum, instead of going behind the child's breech and pronating round it. This method is made easier by placing the woman on her side—the side toward which the feet are directed—while the operator, standing behind her, passes the hand—right one for right, and left one for left, as before stated—with its back toward the pubes and acetabulum, directly to the feet." (King.)

Dr. D. Berry Hart, in a paper read before the Edinburgh Obstetrical Society and published in the *Scottish Medical and Surgical Journal*, has this to say in his choice of the feet in podalic version: "Seize the knee or leg which maintains the dorso-anterior position or converts the dorso-posterior into a dorso-anterior; that is, take the farther limb in dorso-posterior cases, the nearer in dorso-anterior cases. When, however, in dorso-anterior cases the breech is in the fundus, traction on the nearer leg may convert it into a dorso-posterior, and when the breech is near the os in dorso-posterior position, traction on the farther leg may not alter the posterior position of the back after version, owing, again, to the want of the necessary obliquity in the pull."

When the child has been turned the case may be left to nature unless circumstances render rapid delivery necessary.

Manual dilatation of the cervix is generally difficult and tedious, but in such cases if the operator is persistent he can dilate the cervix sufficiently within twenty minutes. One should always be careful in flexing the limbs, as there is danger of rupturing the uterus. It is generally best to bring down only one foot and make traction, leaving the other to assist in greater dilatation of the cervix.

LOUISVILLE.

PUERPERAL ECLAMPSIA.*

BY J. T. REDDICK, M. D.

I read a paper some months ago before the Paducah Medical and Surgical Society on the subject of puerperal eclampsia, and some of my friends — members of that Society — requested me to present a paper to this Society on the same subject.

In bringing before you for your consideration the subject of puerperal eclampsia, I do so with a full knowledge of the fact that its etiology has long been a mooted question, and as a result much has been written and said about the disease. I have taken the pains during the past several months to consult a large amount of literature, consisting of the latest books and periodicals, on the subject of eclampsia, and find that various writers, high in authority, differ materially as to its etiology and treatment, as will be shown by some references.

By the term puerperal eclampsia is meant a peculiar kind of epileptiform convulsion which usually occurs in the latter months of pregnancy, or during or after parturition, and which every obstetrician of any great amount of experience has seen, and having once seen a case it becomes so indelibly impressed upon his memory that it is never forgotten.

The fact that the etiology of eclampsia has long been a mooted question has made it an interesting field for study, and many of the theories that have been advanced as to its cause have been found to be incorrect. It has been claimed that eclampsia was due to pressure of the gravid uterus on the renal vessels. This can be disproved by the fact that eclampsia is, perhaps, never caused by fibroid or ovarian tumors, and

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further, that the gravid uterus exerts no such mechanical interference with the kidneys when it rises above the pelvic brim.

One of the recent theories advanced as to the pathogenesis of eclampsia is that it is an infectious disease and due to a specific germ. W. Stroganoff, in *Zeitschrift f. Geb. u. Gyn.* (Stuttgart), and translated in Journal of the American Medical Association, May 19, 1900, says: "Several series of cases of eclampsia at the St. Petersburg Midwives' Institute sustains the theory advanced by Stroganoff that eclampsia is an infectious disease. Analyzing cases reported by others, he notes that Olshausen records eleven series of cases of eclampsia, eighty-three in all, occurring within two hundred and fifty days, and Zwiefel records twenty series. A curve made up from these and his personal observations shows the same striking accumulation of cases the sixth day after the first infection. He affirms that eclampsia is an acute infectious disease caused by an air-borne contagium, which usually penetrates into the organism through the air-passages. The disease germ is very slightly virulent. Men and children are not susceptible to it, nor women at any period of their life except during the puerperium. It can also find favorable conditions for development in the fetus, and it makes no distinction between male and female in this respect. The germ is very resistant, and in hospitals retains its virulence about three weeks. The period of incubation is short — from three to twenty-four hours. Primiparæ, women bearing twins, and women with renal affections, are most susceptible. Strict isolation of all cases and disinfection of attendants are imperative. Nocard also admits the infectious nature of the disease, from his observation of its occurrence in cattle and dogs when casting their young."

Prof. James M. Anders, of Philadelphia, author of Anders' Practice, in Sajous' Annual and Analytical Cyclopedia for 1900, says: "Pregnancy may act as a cause of acute nephritis (nephritis gravidarum). In such cases it usually appears in primiparæ in the last months of gestation, and is probably the result of renal engorgement, due both to mechanical pressure and to nutritive disturbances in the kidney, due to the altered blood condition. Latent chronic nephritis may form the cause of a manifest acute nephritis."

Herman, in British Medical Journal, from Sajous' Annual, reports six cases of pregnancy with Bright's disease. Two forms recognized: one hyperacute, absence of premonitory symptoms, chiefly attacking primiparæ, with no diminution of urine and no massive albuminuria; producing convulsions and bringing about the death of the fetus; the

other in older women, the prodromata lasting weeks or months, characterized by increase in the quantity of urine and less severe albuminuria; may be unaccompanied by convulsions, and very often becomes chronic.

K. A. Hertzfeld, in *Centralblatt f. Gynekologie* (Leipsic), October 5, 1901, and translated in the Journal of the American Medical Association, November 30, 1901, says: "In looking over the reports of eighteen thousand dissections at the Vienna Institute of Pathology during the last ten years, eighty-one cases of eclampsia were found. In thirty-eight the record described indications of chronic nephritis; in twenty-five, of parenchymatous degeneration of the kidneys, and in eighteen compression of both ureters. Compression of the ureters was observed in the majority of the cases of eclampsia in primiparæ. In thirty-two out of the eighty-one cases a hemorrhagic hepatitis was mentioned, with compression of the ureters in four; in twenty-one cases no macroscopical alterations were noted in the liver, but compression of the ureters had occurred in ten. Chronic Bright's disease with more or less severe changes in the heart was found in forty-six — 6 per cent of the cases, bilateral compression of the ureters in 22.3 per cent, and acute nephritis in 31.1 per cent. The conclusion from these data seems evident that in the majority of cases of eclampsia there is an existing predisposition to some lesion or affection of the urinary system. This assumption is further sustained by the fact that the cases in which the eclampsia appears in the early stages of pregnancy are considered the most severe. They are almost inevitable cases of pre-existing severe nephritic processes, an important point for the prognosis."

H. O. Nicholson, in *Lancet*, June 29, 1901, and reported in *Sajous' Monthly Cyclopedia of Practical Medicine*, October, 1901, states: "The toxic theory of eclampsia is now the one generally held by most obstetricians, and in this connection the following points may be mentioned: First, it may be presumed that there is an inherent weakness of the kidneys or a susceptibility rendering these organs the vulnerable point in the system; that in every case of pregnancy more or less toxemia exists, and that the blood intoxication becomes more profound toward the end of gestation. Second, that although the eclamptic state is due to a toxemia, the toxic agent which excites the convulsions is probably not always the same; there seems to be different types of the disease. Third, that the toxins may be produced in greater abundance in some cases, and that they are generally more virulent in primiparæ than in multiparæ. In the primiparæ mechanical pressure on the renal vessels

may possibly come more into play, while in the multiparæ a certain degree of immunity against the toxins may have been acquired from previous pregnancies."

Personally, I do not take any stock in the theory that eclampsia is an infectious disease and attributable to a specific germ; I do not believe that it is due to pressure entirely, nor do I believe that it is due to diseased kidneys *per se*. I believe that eclampsia (which is only a symptom) is attributable to a general systemic toxemia having its origin in the liver, gastro-intestinal tract, and kidneys. I believe that the train of symptoms accompanying many cases of pregnancy, namely, neuralgia, pruritus, nausea, insomnia, skin-pigmentation, jaundice, eruptions, melancholia, and mania, may all be traced to the same source as eclampsia, namely, a general toxemia.

Perhaps there is no condition of the body, in health or disease, which is attended with such manifest tendencies for obstructions of normal elimination as that of pregnancy. All of the organs—the kidneys, skin, intestines, liver, and lungs—are always more or less interfered with during pregnancy, either by reflex irritation or mechanical pressure. The most important source of elimination, the intestinal canal, is almost invariably interfered with. Defective action of the liver means cholemia. Retarded liver and intestinal evacuations mean defective sewerage of the system. Lung interference implies carbonic acid retention. Diminished kidney action means uremic poisoning, and a combination of all these conditions necessitates a general toxemia, and while all these functions are more or less disturbed we can readily understand how soon one can become poisoned.

The physiological growth and development of the uterus and its contents, fetus and placenta, necessitates an increased blood supply, hence an increased vascular and nervous tension, and in almost all pregnant women there is an increased excitability and irritability of the nervous system.

E. P. Davis, in *American Gynecological Journal*, July, 1899, states that "the weight of evidence is distinctly in favor of the belief that a profound toxemia, originating within the bodies of the mother and fetus, is the cause of eclampsia." Davis further says: "The urine of eclamptics injected into animals is but feebly toxic, while the urine of healthy individuals is often highly toxic. But this is because the toxins of eclampsia, while absent from the urine, are retained in the blood serum and in the organs of the body. If the urine were toxic the patient would

get rid of the poison and would not be intoxicated. The serum of eclamptics is highly poisonous to animals."

It is not necessary to speak to this intelligent body of physicians of the symptoms of eclampsia, except to say that the symptoms are divided into premonitory symptoms and symptoms of the attack, and naturally therefore the treatment is divided into prophylactic and that of the emergency or attack.

If, as seems to be proven, eclampsia is a general toxemia having its origin in deficient liver, kidney, and gastro-intestinal action, then our prime object in prophylactic treatment must be free elimination, thus freeing the system of its toxic elements; hence, diuretics, diaphoretics, and cathartics must play a leading rôle in the medicinal treatment. It is fortunate that the consensus of medical opinion has taken the more broad and comprehensive view of the pathology of puerperal eclampsia by concentrating our attention not on one, but on many organs of the body, in determining the causation and judicious management of this frightful malady.

Having been called to see a pregnant woman and finding her with a general anasarca, the skin having a blanched appearance, puffiness of the eyelids, coated tongue, constipated bowels, extreme nervousness, violent headache, scanty or suppressed secretion of urine, and albuminuria, then free catharsis with calomel—I prefer calomel because it is cathartic, diuretic, and antiseptic—and followed by diuretics and a milk diet will frequently avert a convulsive seizure. A favorite diuretic of mine is infusion of digitalis made from fresh leaves and acetate of potassium. I know it is said that potassium salts are irritative to the kidneys, but I have almost always had good results from this combination of remedies. The patient should be instructed to drink freely of good water and keep the bowels in good condition. Frequent examinations of the urine should be made, and also the quantity of urine should be looked after. The prophylactic treatment is of particular importance, because experience teaches that in almost all cases except those in which chronic nephritis exists free elimination prevents the eclamptic attacks. For this reason it is important to keep the emunctories in order.

The treatment of the attack has been limited to the therapeutic and the surgical, the former including veratrum viride, morphia, chloral hydrate, chloroform inhalations, etc., and the latter including phlebotomy, forcible dilatation of the cervix, version, lateral incision of the cervix, and forceps. A careful review of the controversy shows that the real

question at issue is, whether the patient shall be delivered at once upon the occurrence of convulsions, no matter what the stage of pregnancy may be, or shall we try the therapeutic method first and resort to the surgical only when the first method has failed? *Veratrum viride* and morphia probably stand at the head of the list to-day as remedial agents for the convulsions.

Much has been said during the past year relative to the use of saline infusions in large quantities in the treatment of eclampsia, and to-day that treatment is endorsed by many leading obstetricians of the country. It is claimed that its diuretic action is marked and prompt. I have had no occasion to use it since my attention has been called to it, but the treatment is rational, and since the experience of those who have used it is so satisfactory I will use it when occasion demands.

About ten years ago, at a semi-annual meeting of the Southwestern Kentucky Medical Association at Princeton, Ky., Dr. R. S. Coleman, of that city, read a paper on the use of *veratrum viride* in the treatment of eclampsia. Since that time I have used it in perhaps a dozen cases, always with good results. I give it in doses of fifteen to thirty drops (Norwood's tincture) hypodermically, and have never had any bad results. In a number of the cases there was no return of the convulsions after the first dose.

Regarding the use of *veratrum viride* in the treatment of eclampsia, the editor of the *Therapeutic Gazette* addressed letters to prominent obstetricians in the United States, asking for opinions. Their replies were recorded in the same journal, August 15, 1901. Replies were received and recorded from eight prominent obstetricians. Five of the replies commended strongly the use of *veratrum* in the treatment of the convulsions. Three were against it. In order to get both sides of the controversy before you I quote one reply from each side. Barton Cooke Hirst, M. D., Professor of Obstetrics, University of Pennsylvania, says: "I have employed *veratrum viride* in the treatment of eclampsia for some twelve or thirteen years, and have great confidence in its efficiency. I have seen it reduce the pulse to 60 or below in a few minutes, and as long as the pulse was so reduced the convulsions have not reappeared. I usually give fifteen to twenty drops of the fluid extract hypodermically as the first dose, and repeat it in five-drop doses if the pulse rises in rapidity. I have once or twice seen poisoning result, but it was not serious and was easily manageable by stimulants. As you may imagine, the drug is most valuable in cases with a strong, bounding pulse,

with suffused face and danger of cerebral apoplexy ; in an asthenic case with feeble pulse and pale face I would not employ it. It certainly takes the place, I think, of venesection, and is desirable in the kind of cases in which bleeding would do good."

Now in order to give the other side of the question I quote from W. Reynolds Wilson, M. D., obstetrician in charge of the Philadelphia Lying-in Charity. He said: "I think your proposition to determine the exact status of this drug in this use is very important, for I agree with you that unless it has some special beneficial action, or perhaps to put it more properly some decided action in special cases, it ought to have no place in the therapy of eclampsia. Personally I place no dependence upon it, as in my experience the method by which eclampsia can be best treated, outside of prophylactic measures, is by the establishment of prompt elimination. For this reason I am in the habit of administering full doses of calomel, two grains in repeated doses until at least twenty grains are taken, for the diuretic as well as the purgative action, as soon as possible after the control of the eclamptic seizure. For the latter purposes I begin to feel that full doses of morphia are to be relied upon almost equally with chloroform, as in the majority of cases I believe the condition due to the special toxemia, with the resulting rather than primary nephritis. One point in reference to *veratrum viride* is of great importance, and that is that the drug possesses, if I understand the subject rightly, a powerful motor-depressant effect. This being the case, it would seem to me that its use might interfere with the active uterine contractions which are apt to supervene in eclampsia parturientium, and which constitutes nature's means of removing the exciting cause of the convulsions."

I will now briefly report two interesting cases of eclampsia occurring in my practice, and I am through. Called by telephone to see Mrs. J. D. Y., Sunday, May 21, 1899, at 8 o'clock a. m. She lived a short distance out of the city. I tried to ascertain by telephone the nature of the case, but could not, hence was not prepared for an emergency. Patient, multipara, about eight months advanced in pregnancy, had complained that morning of severe headache, and had general anasarca and scant urine ; had had two convulsions before my arrival, and was unconscious. Patient was bled and prescribed an eliminative treatment. Saw patient at 3 p. m. same day ; she had had four convulsions. Gave twenty-five drops *veratrum* hypodermically, and thirty grains chloral hydrate per

enema. Remained with patient some time; she continued restless, and I gave morphia hypodermically. Visited patient at 10 p. m. and found her resting well. May 22d, 9.30 a. m., patient very much improved, apparently perfectly rational; knows nothing of being sick or of my having been there the day before.

May 24th, 4 p. m., two days later. Patient now very much improved; says she remembers nothing from Sunday morning until to-day; remembers nothing of my visit Monday, although she appeared to be rational at the time. I had not been able to get a specimen of her urine up to this time, and I instructed her husband to report to me later if she did not continue to improve, and to bring specimen of urine.

May 28th, one week from first call, husband brought specimen of urine and said patient was complaining very much and had "smothering spells." Urine showed large quantity of albumen.

Asked Dr. Rivers to see the case with me. Patient's pulse 130 and feeble, respirations 43, unable to lie down, nervous, and all indications unfavorable. We decided to at once terminate the pregnancy. My instruments were sterilized. I scrubbed vagina and external genitals thoroughly with green soap and bichloride. Dr. Rivers anesthetized the patient with chloroform and I dilated the cervix with my fingers, finding a placenta previa lateralis, in consequence of which there was considerable hemorrhage; placed forceps and delivered child, living. The operation was entirely complete in forty-five minutes from the time the chloroform was commenced. Mother made a good and prompt recovery. Child lived only a few weeks. Do not know the cause of the child's death, as I did not see it.

CASE No. 2. Mrs. H. J., aged twenty-four, always a strong, healthy woman, never had any disturbance of menstrual function, ovarian trouble, or even the slightest leucorrhea before conception, which took place more than a year after marriage. Simultaneous with conception she developed trouble in right ovarian region. A tumor developed, pain was severe, patient had slight fever. Consultation was had, patient was anesthetized, and a diagnosis of extra-uterine pregnancy was made. At about the ninth week of her pregnancy, with the assistance of Drs. Caldwell, Stewart, and Rivers, I operated and removed an ovarian cystoma instead of finding an extra-uterine pregnancy. The normal pregnancy was not disturbed. Patient made a rapid and complete recovery and continued well until about six weeks before the end of gestation, when I was called and found symptoms of nephritic trouble,

namely, general anasarca, albuminous urine, etc. An eliminative treatment was at once instituted, patient put upon a milk diet, and every effort made to carry the patient through to the end of the term. My former connection with the case made me more than anxious to conduct the patient safely to the end of pregnancy. I was unable to free the urine entirely of albumen, and several times became very uneasy about my patient, and advised that she be left at no time alone. The beneficial effects of a milk diet were especially noticeable in this case, the patient herself noticing that she became worse if she did not adhere to the dietetic treatment as prescribed. The Southwestern Kentucky Medical Association was in annual session in this city about the time my patient was worse, and I reported her case to the Society and asked for advice. Several of the members advised that I at once terminate the pregnancy, but this I did not do. I was called to the patient in labor at full term the morning of June 3, 1901. Labor progressed favorably until about 7 p. m., at which time she was in second stage of labor, the head beginning to press upon the perineum. About that time she began to complain of severe headache, the first time in her illness she had complained of headache. I was sitting by the bedside, looking at her face, when I noticed her head draw to one side, her eyes draw over until the whites only were seen, and slight twitchings of the eyelids; this was repeated two or three times, and I asked patient if she had not been slightly unconscious. She replied "No." I immediately telephoned for Dr. Rivers; he came promptly, and I related to him what had occurred, and about that time she was seized with a violent convulsion. He immediately chloroformed her and I completed the delivery with forceps, the patient having a complete perineal laceration. The perineum was immediately carefully sutured, and in a short time we left patient entirely rational. Visited patient next morning at nine o'clock, and found that she had just had a rigor and then had a temperature of 104°. Her fever continued for about ten days. It was not a septic fever. She complained at times of severe pains in kidneys, especially right kidney, so severe that I had to resort to morphia hypodermically. There was not a particle of union in perineal wound, not even an attempt at union on the part of nature by the throwing out of granulations, as the wound presented a dry, glazed appearance. This was no doubt due to the general systemic toxemia. Patient, however, otherwise continued to improve, urine cleared up, and in about four weeks she went to her mother's, a short distance away. She immediately became worse, again had fever,

albuminous urine and severe nephritic pains. A microscopical examination of her urine was made, which showed numerous blood and pus corpuscles; a diagnosis of pyelo-nephritis was made, and the ultimate recovery of my patient was despaired of. In a few weeks, however, she again began to improve. Repeated examinations of her urine were made from time to time, and in October, 1901, four months after delivery, I found the urine entirely free from albumen, and on October 16th, assisted by Drs. Cooley and Rivers, I operated for lacerated perineum. The operation was successful. After operation she complained again of kidneys, and her urine showed a slight trace of albumen. I examined her urine again a short time ago and found it clear.

PADUCAH, KY.

ABORTION OF GONORRHEAL OPHTHALMIA.*

BY WARWICK M. COWGILL, M. D.

With the baneful effects of the ubiquitous gonococcus always before us, it is not necessary to speak of the importance of our ever being on the alert to thwart its destructive career. Nor is it necessary in order to enlist your interest to go into statistics to show the large number who dwell in darkness and whose blindness can be traced directly to the action of the gonococcus.

The prevention of ophthalmia neonatorum by Credé's method is so well established by large statistics that its efficacy is beyond dispute. Dr. Lucian Howe (Phil. Med. Jour., Jan. 18, 1902) cites statistics by Kostling showing that in seventeen thousand births where no prophylactic treatment had been employed some trace of ophthalmia developed in over 9 per cent, whereas in twenty-four thousand children treated by the Credé method the number who developed the disease was only one half of one per cent.

Now, it is also true, probably, that a large per cent of the cases of ophthalmia neonatorum are due to infection of the conjunctiva by gonococci. Hence, it would follow that in preventing this disease in a certain percentage of the cases it is done by killing gonococci that are present but have not yet attacked the conjunctiva.

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Now, if it is possible to carry this procedure one step farther, and abort gonorrheal ophthalmia in its earlier stages, it would save many eyes. The abortion of gonorrhea of the urethra has been a subject of discussion for many years. Its attempt has been advocated and condemned, condemned and advocated. The pendulum has swung through all its phases. At present, from what I can learn, those in genito-urinary practice condemn attempts at aborting this disease in the urethra.

As to aborting gonorrheal ophthalmia, I have seen nothing of it in ophthalmic literature. On the contrary, teaching has been directly opposed to the use in the incipient stage of gonorrheal ophthalmia of any remedial agent in sufficient strength from which we might expect abortive action. Especially is this true of that most active of germicides, silver nitrate. But older views in medicine are sometimes changed in the light of modern etiology and the later advances in therapeutics. It is possible that such may be the case in regard to the present subject.

This idea was suggested to me by a little experience in my own practice, an experience so meager that it lends only to the suggestion of a possibility. I remember full well the old adage that it take more than one swallow to make a summer. I am fully aware of the broad foundation that facts must be reared upon, yet the results I refer to impress me so favorably that I dare to present them to you. I will report two cases.

CASE I. J. S., colored, employe of I. C. R. R. There was profuse suppuration of the left eye, with great injection and chemosis. No corneal implication. Patient said the eye had been affected several days. The appearance of the eye was that of a typical case of gonorrheal ophthalmia. Patient also had at the time a urethral discharge. There was marked conjunctivitis, with slight mucoid discharge of the right eye, which had commenced, according to the statement of the patient, the day before. The treatment instituted was instillation of a twenty per cent solution of protargol every four hours, with almost continuous bathing of the eyes with cold (iced) water. The blennorrhea gonorrhoeica (for such I took it to be in its incipient stage) affecting the right eye subsided promptly, and the eye was free from redness and secretion in four or five days. The inflammation and suppuration gradually subsided in the left eye (the one first affected, and in which there was a fully developed case of gonorrheal ophthalmia), and patient was discharged well in two weeks.

CASE 2. Mr. W. A. S., aged twenty-one, employe of I. C. R. R., referred to me December 20, 1901. Right eye very much inflamed with purulent secretion. The eye had been affected two or three days. The patient had urethral gonorrhea at the time. Diagnosis was gonorrheal ophthalmia of right eye. The left eye was not inflamed. I placed a Buller shield over the left eye and instituted the following treatment: Almost constant cleansing of the right eye with boric acid solution; iced cloths for twenty minutes each hour, and instillation of a twenty per cent solution of protargol every four hours.

On the following day when I saw the patient at the hospital—some twenty-four hours after I first saw him—the left eye, the one that had appeared well the day before, was injected and gummed up with a mucoid discharge. I believed it to be gonorrheal infection of the left eye—not the gumming up of the eye that we find when an eye is under a shield; so I removed the shield and had the same treatment applied to that eye as to the right eye, namely, cleansing, iced cloths, and a twenty per cent solution of protargol. In four days the left eye was well. The inflammation and suppuration rapidly decreased in the right eye, and on December 31st, eleven days after treatment was commenced, the patient was discharged well.

I know that to have made my diagnosis absolute I should have had a microscopical demonstration of the presence of gonococci in the secretions from these eyes. In the absence of microscopical verification I report the above two cases only, for I fully believe, as in each case there was present a disease of the urethra which had all the appearance and history of being gonorrheal, that the eye trouble was gonorrheal, and that the implication of the second eye in each case was gonorrheal, and by timely and efficient treatment the disease in these two eyes was cut short—aborted.

If, then, it be true that gonorrheal ophthalmia can be aborted by the use of an efficient remedial agent if seen in its incipency, would it not be wise to begin treatment in all suspicious cases, in the absence of microscopical findings, with a germicide of such strength that should the suspicion of gonorrhea prove true there is a possibility of checking the disease?

As to remedial agents, I would not advocate this indiscriminate use of solutions of nitrate of silver. But since we have in protargol an innocuous and non-caustic agent of high germicidal power, and it is claimed the property of penetrating tissues deeper than agents like

silver nitrate or bichloride of mercury, that exert but superficial action on account of their coagulability—an agent that can be put into the hands of the patient with safety—I would advocate the use of this agent in efficient strength, from twenty to thirty per cent solution, to be used from five to six times a day, in every case of blennorrhœa seen in its incipency where there is the slightest suspicion of gonorrheal infection, and give the patient the benefit of the doubt.

PADUCAH, KY.

THE THERAPEUTIC USES OF THE X-RAY, WITH REPORT OF CASES.*

BY JESSE T. DUNN, M. D.

*Lecturer on Surgery and Rectal Diseases and Instructor in Laboratory of Surgery, Kentucky
School of Medicine.*

The unexpected serious results of a free and careless exposure to the X-rays in the early days of this new form of energy led up to the discovery of its therapeutic value in a certain class of diseases. X-ray burns were frequently reported from all quarters when we were not familiar with the dangers attending the application of this new light. These burns were of various degrees, varying from the slightest erythema to a severe slough involving the entire cuticle and underlying connective tissues. It was also noted that in hairy portions unduly exposed to the ray, a loss of hair resulted, which in a short time was reproduced.

A knowledge of the nature and effects of the X-rays is essential to the successful delivery of the treatment to all conditions in which this form of treatment is desired, because repeated exposures are necessary to obtain the curative results, and just herein lies the danger of this treatment. The kind of tube, whether hard or soft, the distance from the patient, the length of exposure, and the frequency of repetition, all require a nice adjustment to secure the end sought. That there is a limit of safety there can be no doubt.

As Pusey has said, the local effects of the X-ray may be stated to be, first, changes in the epidermis itself or its appendages: (a) pigmentation; (b) blanching of the hair; (c) outfall of the hair; (d) trophic

* Cases exhibited and paper read by invitation before the Practitioners' Club, October 14, 1902.

changes in the nails similar to those of the hair, sometimes resulting in the interference with the growth and in severer cases in the shedding of the nails. Second, changes in the corium and subcutaneous tissue. These are all inflammatory in character, varying from a slight erythema through all degrees of dermatitis up to necrosis.

This train of results being encountered by all who did X-ray work quickly led up to the present therapeutic use of the rays, which to-day chiefly consists in its application to the treatment of the following conditions:

1. Hypertrichosis, superfluous hair.
2. Diseased hair and hair follicles, as sycosis, tenia torsurans, and favus; in such cases the removal of all hair is essential to treatment.
3. Inflammatory skin diseases, as in chronic eczema, tubercular glands, and Hodgkin's disease, where stimulation and absorption is necessary.
4. Where the destruction of tissue of low vitality is necessary, as in lupus, epithelioma, etc.
5. Where the destruction of healthy, though unnatural tissue is desired, as in the various forms of birth-marks (moles, wine-marks, etc.).
6. Where destruction of the sweat follicles is desired, as in hyperhidrosis.

Removal of Hair. The removal of hair by this method in the hands of many operators has been entirely satisfactory. Freund, who was the first to use this method, met with success in his first as well as subsequent cases. The hair has never returned. Many cases have been reported in which many months have elapsed with no recurrence.

This method of removing hair is painless and much less tedious than by electrolysis. It also removes the "down" with almost as much ease as the large hairs. There is no evidence of application of any form of treatment for the removal of hair until a few days before the hairs are ready to drop, which is usually about the eighteenth or twentieth sitting, then there appears a mild erythema which I term a reaction, which may be kept within the bounds of safety by a careful adjustment of treatment. If too long or too frequent exposures are made a mild erythema may become a severe dermatitis which will result in a shedding of the superficial skin. The advent of the initial erythema is the signal that enough treatment at daily intervals have been given.

Subsequent treatments should be at such intervals as to continue a mild form of erythema. The hairs usually drop, or are easily removed, in a few days after erythema begins. Treatment must not be stopped at this point, for the hair follicle is not yet destroyed; fifteen or twenty additional treatments will probably be necessary to insure their complete destruction.

CASE 1. Miss L., referred to me in December, 1901, by Dr. Henderson. Patient aged thirty, with a heavy growth of hair over the lips, cheeks, and chin. These hairs varied in length from the finest "down" up to one and a half inches. This patient began treatment December 31, 1901, taking eleven treatments, a total of eighty-nine minutes. Reaction appeared on January 10th; treatment was discontinued. Hairs became loose and were easily removed, except under the chin. Short exposures were again given for seven days, beginning January 15th; discontinued treatment in five days, and when reaction subsided she received ten additional treatments of ten minutes each, resulting in reaction which continued until February 27th. At this time the hairs beneath the chin were still tight. After five sittings of ten minutes each, the treatments being directed to the hairy portions beneath the chin, gave a reaction which resulted in the removal of all the hair. On March 25th erysipelas began about the head and extended over the entire face and neck. The head and neck were not exposed to the rays during any portion of the treatment, having been covered by a lead mask. I could not account for this condition of cellulitis until a close inquiry revealed the fact that her father and sister were subject to erysipelas. This case ran a typical course and finally disappeared. In the meantime it was impossible to give her the treatment necessary to complete the destruction of the hair follicles, consequently a great many of the hairs thus removed returned.

That the X-ray did not cause this condition of erysipelas I am quite sure, because after the first attack of erysipelas had disappeared for ten days, without any subsequent exposure to the X-rays, the same condition of erysipelas developed and again subsided in due time, and a third time reappeared without having been exposed to the influence of the X-rays. I advised the patient to go to her home and wait until she recovered from this condition, when she should return and again take up the treatment.

CASE 2. Miss G. began treatment April 6th for the removal of a heavy growth of hair upon the lip. I gave her twenty-one sittings in

twenty-one days, with a total of three hours and eight minutes. The reaction was mild and appeared about the twentieth day, when all the hairs were removed. I afterward gave her occasional treatments, taking thirteen in thirty days, or a total of one hour and thirty minutes. Total time under treatment, seven weeks; results satisfactory.

CASE 3. Mr. A. began treatment April 7th; this patient's hair grew very low upon his forehead, it being necessary to shave the forehead daily up to the point where the hair should naturally have been. I gave him nineteen daily sittings, making a total of two hours and fifty-seven minutes, at which time a mild reaction appeared and treatment was suspended for a few days, at the end of which time the hairs were all easily removed, and treatments at intervals of three and four days were instituted for four weeks, in which time he took a total of fifty minutes. Total number of sittings, twenty-seven; total time, seven weeks; total time of exposure, three hours twenty-seven minutes. Results satisfactory.

CASE 4. Miss R., with heavy growth of blonde hair on lips, cheeks, and chin; began treatment January 4th, taking twenty-five sittings in thirty-six days, total time of exposure three hours fifty-nine minutes. Reaction was mild, appearing about the eighteenth day. A few days later all the hairs dropped out. The patient living out of the city was obliged to go home; I consented upon promise that she would return at the end of three weeks, when the reaction had all subsided, and allow me to give her another week or ten days' treatment to insure the destruction of the hair follicles. After her return home a rather severe dermatitis began, the epidermis finally being destroyed, but was reproduced, leaving the face perfectly smooth and free from hair. Her complexion was excellent. She was so well pleased with her condition that she thought it unnecessary to return for further treatment, but did so after she saw the hair beginning to reappear on the face. In this state it was necessary to undergo the entire operation again, which she did, again taking sufficient treatment to cause a mild erythema which resulted in the removal of the new growth of hair. A letter from this patient a few days ago tells me that a few of the hairs upon her lip have returned.

CASE 5. Miss F., with a heavy growth of hair upon lip and chin, began treatment March 14th, taking ten minutes daily until a total of three hours had been given, when a mild reaction appeared in two weeks; I then gave her five minutes daily until sixty-nine minutes'

exposure had been given. Reaction continued slight; the hair all removed in the fourth week. Patient dismissed six weeks after beginning treatment.

CASE 6. Miss S. had a heavy growth of eyebrows growing well down upon the nose, also heavy growth of hair upon the lip. Forty-one exposures, making a total of four hours and seventeen minutes, an average of six minutes per sitting. Reaction appeared with the twelfth sitting, hair all removed at the thirty-fifth sitting.

CASE 7 (Fig. I). *Epithelioma*. Mr. A., with an epithelioma upon the right cheek, the size of a half dollar, of two years' standing. Began as a horny growth, which has rapidly increased to its present size,

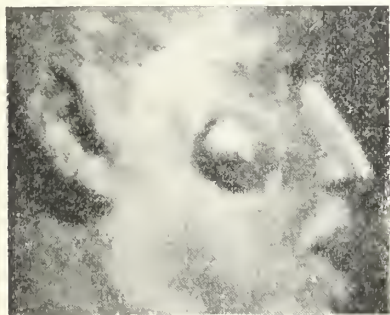


FIG. I. EPITHELIOMA ON CHEEK.

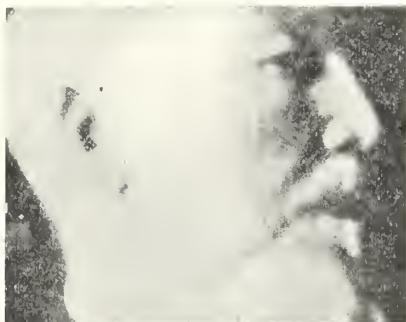


FIG. II. SAME AFTER TREATMENT.

elevated and granular; no pain of any consequence. There are four of these horny elevations upon the face, resembling the one which first made its appearance and resulted in the epithelioma now so large. Began treatment March 14th, receiving ten minutes' treatment to begin with, taking eighteen treatments, with a total of two hours and forty minutes. Reaction began on the twenty first day; in twenty days the reaction had disappeared. With the appearance of this reaction a decided change in appearance of the epithelioma ensued; it became gray, and rapidly sloughed away. The sloughing continued until a considerable portion of the underlying connective tissue had been destroyed. After this destruction was completed healthy granulations rapidly filled in the cavity, and May 10th, nearly two months after beginning treatment, all dressings were discontinued, the entire epithelioma having been removed. (Fig. II.) The small horny growths, which were evidently beginning epitheliomas, were also treated at the same time. They became loosened and dropped from the epidermis in the form of a scale soon after the appearance of the erythema.

CASE 8. Mr. H., epithelioma on the right side of nose, the size of a split pea, of twenty-two years' standing. Began as a small pimple; was cauterized with chloride of zinc; remained healed three years; reopened again and electrolysis was used, under which treatment it again healed for three years and again made its appearance. This time it was treated by some form of cancer paste, under which treatment it seemed to be entirely destroyed and gave no trouble for two and a half years, when it again made its appearance. This time he decided on the X-ray treatment. Began treatment May 18th, taking ten minutes at a sitting until two hours and twenty minutes had been taken, at which time a mild reaction appeared and the entire growth sloughed out without other treatment. The ordinary surgical dressings were then applied. The opening soon filled with healthy tissue, and is in good condition at the present time.

CASE 9. Dr. O., small epithelioma under the left eye; began treatment May 16th. This patient took eight sittings, with a total of one hour and fifteen minutes. The reaction was mild; the epithelioma disappeared by sloughing. Dismissed cured.

CASE 10. Miss H., epithelioma on the cheek; began treatment May 1st, taking twenty-four sittings in thirty days; time, three hours and fifteen minutes; reaction mild. Results satisfactory.

CASE 11. Mr. S., epithelioma located upon the left cheek, near and making rapid growth toward the eye. Thirty exposures, making a total of three hours and twenty-five minutes. The reaction began about the fifteenth treatment; this reaction was pushed as far as possible to be within the bounds of safety, in order to reach the deepest portion of this condition. About the third week the malignant tissue began to break down and come away in the form of a slough, which was fairly well completed when the patient left for his home in Indiana. He will return to us in a few days, when he will take further treatment if it is thought advisable. I have no doubt but that the result in this case will be as satisfactory as in cases just reported.

Carcinoma. CASE 12. Mrs. L., a recurrent carcinoma of the breast, very ugly in appearance. Is quite painful, and occasionally the ulcerating process opens up large vessels which give considerable trouble in the way of hemorrhages. This patient took twenty treatments, or a total of three hours and twenty-nine minutes. Reaction began about the twentieth treatment. Unfortunately this patient at this stage of the treatment was obliged, on account of her reduced

circumstances, to go to the city hospital, where she is at present, and has not been able to resume treatment. It is interesting to note, however, that the pain which she suffered at the time she began treatment soon subsided.

CASE 13. Mrs. G., aged seventy-five, recurrent carcinoma of the breast. This was a case which occurred in my own practice. About four years ago I removed the breast of this patient for carcinoma. There was no sign of a recurrence until about last March; even then there was no external evidence of a recurrence. She developed, however, a pleurisy with effusions upon this side, which after being aspirated again refilled, and inasmuch as the pleura which was involved was located just at the site of the amputated breast, there being no other way to explain the cause of this pleurisy, her family physician and I decided that the original disease had possibly extended to the pleura and mediastinal glands. It not being a favorable case for operative interference we decided to begin with X-ray treatment, which rapidly caused the disappearance of the pleuritic fluid, relieving the consequent dyspnea and pain. This patient received forty-three treatments, or a total of six hours and forty-three minutes. The treatment being directed to the deeper structures, there was consequently no reaction upon the surface. The integument, however, became pigmented to a marked degree. This patient subsequently developed a serious stomach trouble which caused her death.

CASE 14. Mr. M., referred to me by Dr. Coomes, June 19th, has the following history: Had an abrasion on the skin for thirteen years, located at the corner of his mouth. Appeared as a small fissure, then enlarged very slowly for ten or eleven years, and in two months grew to equal the size of an English walnut. There was no pain, no hemorrhage; was smooth and covered by integument. Was removed by the knife and healed nicely. In one month it appeared at the angle of incision, the line of suture became involved and is at present open, looking very much as if the original tumor had just been removed. It is discharging a very offensive secretion. There is no glandular enlargement of the neck. Began treatment the 19th of June. On account of the gravity of the case he was given twenty minutes' exposure. The subsequent treatments consisted of ten minutes each, and at the end of the third day the very offensive odor had entirely disappeared. Reaction appeared after the sixth exposure. By the 29th of June the diseased tissue was suppurating and sloughing freely,

and the surrounding tissue began to contract, lessening the opening very much. On the inner side of the upper lip one slough made a sinus, the size of the little finger, and the surrounding tissue softened and sloughed out. Pain decreased after the third exposure; patient slept well, which he had not done for weeks before. After three weeks, with occasional treatment, the patient was allowed to return home until the reaction subsided, at the end of which time he returned and the sloughing process had extended until the abraded surface was two or three times the size of the original, extending well upon the cheek, through which his teeth and superior maxillary bone could be seen, thus showing that the malignant condition was very widespread. It is the belief of Dr. Coomes, who has constantly kept watch on the case, and it is my own belief, that the healing process is now well under way, and we will eventually secure a good result.



FIG. III. RECURRENT CARCINOMA.

CASE 15 (Fig. III). Mr. W. has a very decided family history of cancer. This patient observed, in 1877, a tumor the size of a pea on the upper jaw, which was tender and irritated by contact with some defective teeth. The tumor gradually enlarged, and was removed by Dr. Holloway in 1881. It caused constant trouble, and Dr. Holloway advised a second operation, which was declined. In 1887 it began to ulcerate on the outside and continued until 1890, when the patient went to Cincinnati to a physician, who applied a plaster and treated it for five weeks, at the end of which time the ulcer had healed and the patient thought he was cured. It gave no more trouble for three years, but in 1894 reappeared, when he again applied the same treatment and again it

remained healed for two years. In 1897 it was again necessary to take treatment, and the same treatment was instituted, and each succeeding year has been under the same treatment up to the present date. The patient is otherwise in good health; no enlargement of lymphatic glands; the entire upper lip on the right side has been removed, also the teeth, both upper and lower; the tongue shows no involvement. The gums are involved and some open sinuses are in same. The side of the nose and entire cheek are indurated, as is the entire lower lip. The patient complains of pain, which has caused considerable loss of sleep. There are almost daily hemorrhages from these abrasions. Patient began treatment June 25th, and has taken fifty-two treatments, or a total of six hours and sixteen minutes; reaction appeared about the twelfth treatment, which has been kept up by treatment every other day up to the present time. As a result of these treatments the induration has entirely disappeared and the surrounding structure is much more pliable. Patient suffers no pain, the hemorrhages have ceased, and rest is undisturbed. There is no tenderness under pressure. The result in every way is perfectly satisfactory.

CASE 16. *Sarcoma*. Mrs. W., sarcoma of two years' standing, involving both tonsils. The left tonsil and palate entirely destroyed; the right tonsil and palate very much thickened and indurated, with a tumor the size of a fist located at the angle of the right jaw. Patient has great difficulty in opening her mouth. Treatments were begun April 17th and continued to May 23d, taking thirty-three treatments, a total time of four hours and four minutes, with a hard tube. Reaction was very slight, pigmentation was marked, and absorption of the enlargement upon the right side was rapidly taking place when the patient died suddenly from a hemorrhage, the result of the ulcerating process which was going on in the left tonsil.

CASE 17 (Fig. IV). *Lupus*. Mr. C., lupus of four years' standing, involving lower portion of the forehead, including eyebrows. Skin very red, and in places shallow ulcerations covered by scabs were visible. His appearance was such that he would not go about his place of business, and was obliged to take his meals in his room. Began treatment March 22d; twenty-six sittings, or a total of three hours and thirty-five minutes, were given. At the end of two weeks all the scabs came off. Treatment was continued almost daily for two weeks longer, at which time reaction presented itself sufficient to unwarrant further exposure; in six days it had sufficiently subsided to receive another series of sittings,

taking five additional. Again it was necessary to desist, and as the patient felt and looked much better he returned to his work. He subsequently went to Hot Springs, where he stayed until the reaction subsided, returning in about six weeks with his face clear of all disease. He received his last treatment May 2d, now nearly five and one half months, and there is as yet no sign of a recurrence.

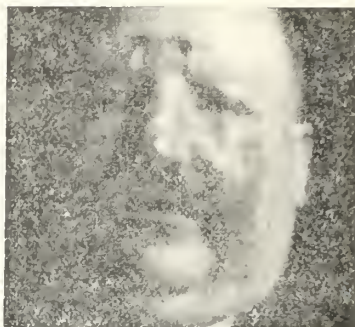


FIG. IV. LUPUS.

CASE 18. Mr. M., lupus upon nose of seven years' standing. The entire nose being denuded of skin, exposure to rays until reaction intervened, suspension of treatment, allowing nature to cast off diseased surface and refill with normal tissue, was the course pursued in this case, and we are rewarded by a repair which is almost perfect; there remains at present only a small opening, the size of a pea, but it is healing. The nose is covered by soft, pliable skin, and does not resemble cicatricial skin.

CASE 19. Mrs. D., lupus, involving nose, both cheeks, and upper lip. The septum in its interior portion has been destroyed and gives the nose an unnatural, flat appearance. Began treatment May 29th, and after the twelfth sitting reaction appeared, which subsided in two or three weeks, leaving the cheeks almost free from the lupoid appearance. Within the nose and a portion of the lip, however, there were points which had not received sufficient treatment, and a second series of sittings was instituted, the effects of which are still very visible. It will probably be unnecessary to undergo further treatment.

CASE 20 (Fig. V). *Tubercular Glands*. Dr. H. History: Glands very much enlarged on right side and small enlargement upon left side of the neck. Began twelve years ago as a result of bee-sting upon the neck, involving entire chain of cervical glands upon right side, some of which

broke down and were removed. Part healed up nicely and was free from evidence of enlargement for seven years. Five years ago the glands began to enlarge again, slowly at first, but for the last seven months have grown quite rapidly. There is no tubercular history in the family. Began treatment June 21st, and has taken fifty-two treatments, or a total of six hours and twenty minutes. Reaction appeared



FIG. V. TUBERCULAR GLANDS.

with the fifteenth treatment. Present condition shows that the rapid growth has not only been arrested but that they have actually diminished in size. Treatments will be continued and an effort made to have all enlargement absorbed.

CASE 21. *Hyperhidrosis*. Miss P., a stenographer. This condition was very annoying; the hands were wet continually from this excessive sweating, which was very disagreeable in handling papers. The hands were exposed to the rays at about four inches for about six minutes at a sitting until six treatments were given. This afterward proved to be too close, as an acute dermatitis followed, in which the epidermis of the palms was exfoliated. Atrophy of the sweat follicles was complete, and the patient's hands are perfectly dry.

CASE 22 (Fig. VI). *Pseudo Leukemia (Hodgkin's Disease)*. Wm. H., twin brother, age twenty-eight years, laborer on farm. This patient came to me on June 17th, and after a thorough examination I referred him to Dr. Irwin, who agreed with the diagnosis of lymphoma. Six years ago enlargement appeared under right ear, and in eighteen months began suppurating. Three years later the left side became enlarged. The growth of these glands was very slow until about six months ago, since which time they have enlarged very rapidly. None have broken

down except the first gland involved, which was very superficial. His weight up to six months ago was one hundred and ninety-five pounds, from which he had decreased forty-five pounds. He is six feet two inches tall. The only suspicious tubercular history that could be elicited from patient was that his twin brother had an enlarged gland at eighteen months of age, which was called scrofula, disappeared under treatment, and recently has enlarged again. Patient gives history of continual elevation of temperature; no specific history. Vitality lowered so much that he could scarcely walk to office, a distance of a few squares. Had been taking cod-liver oil and other builders without



FIG. VI. HODGKIN'S DISEASE.

result; these were discontinued and X-ray exposures begun. Full reaction was obtained in fifteen exposures, and patient was allowed to return home for ten days. Patient returned, and at the close of one month was much stronger and had gained sixteen pounds. Measurement of neck showed a decrease in size of one quarter of an inch. Reaction had subsided, and he was again given fifteen exposures and allowed to return home for eight days. On his return he was again given eight exposures. (It is important to note that he walked six miles to the railroad on this last trip.) He now weighed one hundred and eighty-three pounds, a gain of thirty-three pounds in sixty days. The glands in the neck are very much smaller, and the patient has fully recovered his strength and energy and gone back to labor again.

CASE 23. *Wine-mark.* Miss P., deep wine-mark involving almost entire right side of face. To make a test of time and intensity of treatment required to effect a removal of this condition, I determined to expose only a very small portion and note the effects produced. A

place upon the right temple was chosen, and a metal mask exposing a spot the size of a dime was placed thereon and a series of sittings, numbering fourteen in all, were given, requiring one hour and fourteen minutes, at which time reaction began and treatment was discontinued. In about four weeks all evidence of reaction had subsided and the spot thus treated had assumed the color of natural skin, the pigmentation having entirely disappeared. At present writing she is receiving treatment to a spot about four square inches in size, and at a future time I hope to be able to report equally as good results upon this area.

LOUISVILLE.

Reviews and Bibliography.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D. Illustrated. Volume II, June, 1902. Philadelphia and New York: Lea Brothers & Co. Pp. vi-440. Price, \$2.50 per volume; \$10.00 a year.

Volume II of *Progressive Medicine* is devoted to abdominal surgery, gynecology, diseases of the blood, diseases of the glandular and lymphatic systems, metabolic diseases, and ophthalmology. That portion devoted to perforating gastric ulcer is exceedingly valuable, and the brief report of the cases connected therewith is also valuable. There is no more important subject to the abdominal surgeon than perforating ulcer of the stomach, and none of us can know too much concerning the management of such cases, hence the value of this short article in *Progressive Medicine*. The volume, taken as a whole, is one of the best of the series, especially from a surgical standpoint, and we commend it to the profession.

The Theory and Practice of Infant Feeding, with Notes on Development. By HENRY DWIGHT CHAPIN, A. M., M. D., Professor of Diseases of Children at the New York Post-Graduate Medical School and Hospital, etc. Illustrated. New York: William Wood & Co. 1902. Pp. ix-326. Price, \$2.50.

The subject of infant feeding will ever be an important one to the medical profession, as in this day of fashion and folly so many mothers refuse to nurse their children, which to our minds is unwarrantable in most cases, and to say the least of it inhuman, for the reason that the mother who deprives her babe of that nourishment which was intended for it is committing a very serious crime. However, if we doctors must recommend a substitute, it is our duty to be thoroughly posted as to the kind of food, manner of preparation, etc. This book has been very thoroughly written and is in every way worthy of the consideration of the profession,

for in it are detailed the best methods of infant feeding. Professor Chapin deserves the thanks of the profession for this most excellent book, and we predict that he will not only receive the thanks of the profession but a liberal commercial reward, because the book will of necessity be a good seller.

Grayson's Laryngology. A Treatise on the Diseases of the Throat, Nose, and the Associated Affections of the Ear. By CHARLES P. GRAYSON, M. D., Lecturer on and Instructor in Laryngology in the Medical Department University of Pennsylvania. In one octavo volume of 540 pages, with one hundred and twenty-nine engravings and eight colored plates. Cloth, \$3 50 net. Lea Brothers & Co., Philadelphia and New York. 1902.

In his preface the author says he has "endeavored to eliminate the difficulty of choice by giving under each disease but one plan of treatment"—that which he has tested as being most often successful in subduing its symptoms and shortening its duration. This one paragraph should be enough to recommend the book to every practical doctor. Nothing detracts so much from a book devoted to specialties as an unnecessary array of remedies for the treatment of any disease, and in the selection made by Dr. Grayson of the remedies that he has found most valuable in each particular disease we wish to congratulate him. This book is of more than five hundred pages, well written and well illustrated, and a most excellent work. We commend it to the general practitioner of medicine as one of the most valuable that has been presented to the profession.

Woolsey's Surgical Anatomy. Applied Surgical Anatomy Regionally Presented for the use of Students and Practitioners of Medicine. By GEORGE WOOLSEY, A. B., M. D., Professor of Anatomy and Clinical Surgery in the Cornell University Medical College, Surgeon to Bellevue Hospital, etc. Octavo, 511 pages, with one hundred and twenty-five illustrations, including fifty-nine full-page inset plates in black and colors. Cloth, \$5.00 net; leather, \$6.00 net. Lea Brothers & Co., Philadelphia and New York. 1902.

This is a work of more than five hundred pages, devoted to surgical anatomy. It is divided into regions—as of the face, neck, etc. It is well written, the paragraphs beginning with bold-faced type, so as to render it easier to find any particular thing you wish to look for. The cuts are most excellent, showing the relations of the blood-vessels, nerves, muscles, etc. It not only deals with the parts concerned in surgical operations, etc., but gives the symptoms of dislocations and displacements of bones, ligaments, etc. Great attention has been given to detail, which to our mind is one of the most important things connected with a book of this kind. The grosser things that present themselves are readily recognized, but it is the minor things that are overlooked, and the writer has taken great pains to detail everything connected with each operation as described in the work. The book is certainly a very valuable addition to medical and surgical literature. We recommend it to the profession as being one of the very best of its kind that has been presented.

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H. A. COTTELL, M. D., M. F. COOMES, A. M., M. D., Editors.

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DEATH OF RUDOLPH VIRCHOW.

The death of Professor Rudolph Virchow was not unexpected, as he had not been well for some years, and the recent injury, added to his delicate health, left little else than an early demise to be expected. He was born of humble parentage October 13, 1821, and graduated at the age of seventeen with distinction. He graduated later at a military medical college in Berlin. While in this institution he was under the tutelage of such masters as Mueller, Schleiden, and a host of other lesser lights of that day, and doubtless much of his subsequent greatness was based on the excellent training received under these masters.

He was a forcible and fearless writer, and this latter trait soon brought about a strong antagonism between him and the nobility, which finally resulted in his dismissal from Berlin, but he was soon called to Würzburg and was made Professor of Pathology. His brilliant work in Würzburg brought him into such prominence that, notwithstanding his liberal views, he was recalled to Berlin in 1856, and he was made Professor of Pathology and Pathological Anatomy, and from that day until the hour of his death his star was ever in the ascendent. It never ceased to ascend, nor did it ever pale, and at the time of his demise it was one of the brightest in the medical galaxy. He was not only an earnest laborer in the field of medicine, but he was also an active politician, as evidenced by the fact that he was a member of the

Berlin City Council and the Lower House of Prussia for nearly forty years.

His greatest work in the line of medicine was his "Cellular Pathology." His powers for great mental labor are manifested in many ways. His Archives, which was founded by him, is now in its one hundred and sixty-seventh volume. His labors in the fields of archeology and anthropology were such as to make him a recognized authority on these subjects. Some idea may be gained as to the amount of work done in the scientific world when it is known that it required one hundred and twenty pages to simply record the titles of the papers written by him.

In his death the world gives up one of its greatest men, and the medical profession a master whose equal is yet unknown.

THE IMPORTANCE OF ORGANIZING COUNTY MEDICAL SOCIETIES.

It seems that the members of the medical profession in Kentucky do not fully realize the great importance of organizing their county medical societies, and to that end we wish to call attention to the fact that it is essential for any member of the medical profession who wishes to become a member of the State society to first become a member of his county medical society, and if he has no county medical society to join some adjacent county society, and then after he is inducted into the State medical society he has the way made easy to enter the American Medical Association. The easy way for those members of the State society to get into line who belong to the State society and who have not paid their dues is to write to Dr. Steele Bailey, the Secretary of the Kentucky State Medical Society, and arrange their arrearages with him, when they will be entitled to all of the privileges of the State society. Do not delay in organizing your local societies.

PHOTOTHERAPY.

We owe much to Professor Finsen for this valuable adjunct to the numberless agents with which to combat disease, but the instrument which he devised was too cumbersome, and its great cost made it impracticable and put the ultra-violet rays out of the reach of the great mass of the profession. Professor Minin, of St. Petersburg, has devised

a very simple apparatus for the production of the ultra-violet rays at a small cost, and wherever there is an electric light plant these rays may be obtained. The ultra-violet rays are valuable in superficial epithelioma, glandular enlargements, lupus, chronic inflammations of the skin, diseases of the joints, and contusions with extravasation of blood into the surrounding parts, in fact all acute ecchymotic conditions. The instrument is for sale by Frank S. Betz Co., Chicago, Ill.

Current Surgical and Medical Selections.

THE TREATMENT OF GALL-STONE COLIC.—Dr. George L. Eveleth thus outlines the treatment of biliary colic:

The first indication is the speedy relief of the pain, and is best met by hypodermic injections of morphine, $\frac{1}{4}$ gr. every half hour until pain ceases. With the first dose of morphine, $\frac{1}{100}$ gr. of atropine may be given. External applications of heat are also useful, and a few whiffs of chloroform will relieve the sufferer while waiting for the effects of morphine.

After the attack is over, our aim is to prevent recurrence. The patient should wear a tightly-fitting woolen bandage around his abdomen. Violent exercise is injurious, while moderate activity in the open air is extremely useful. A simple, easily digestible diet, free from fats, pastries, liquors, and highly seasoned articles should be prescribed. Medicinally, the following is given with advantage:

Tincture nux nomica,	3 dr.
Sodium salicylate,	6 dr.
Fl. ext. xanthoxylum,	2 oz.
Elixir orange,	to make 6 oz.
Tablespoonful after meals.	

Mineral waters should be consumed freely, if possible at the springs. Carlsbad, Sprudel, and Vichy are the best. They should be taken in quantities large enough to keep the bowels open without the aid of other laxatives. If the persistent and conscientious adherence to this mode of life does not prevent violent and frequent attacks, or if cholemia is persistent, or the attacks are accompanied by chills and fever—a sign that the gall-bladder has become infected—surgical treatment must be resorted to.—*New York Medical Journal.*

ADRENALIN AS A HEMOSTATIC.—Dr. Douglas Macdonough reports the following case: A boy, aged sixteen, suffered from rather severe intestinal hemorrhage, pain, and nausea, following a fall while playing football. He had a good deal of pain and tenesmus, and passed blood very frequently

(about twenty times in twenty-four hours). His temperature was 103° and his pulse 110. The pain and nausea abated under the use of bismuth and opium, and the case assumed a dysenteric character, with blood and mucus, etc. Ipecac somewhat improved the color of the evacuations, but had no effect on the hemorrhage, neither had diluted sulphuric acid, opium, nor various other astringents. The author then injected into the large intestine, by means of a soft tube, adrenalin chloride solution 1-1000. [The author does not state how much.] Next morning the patient expressed himself as having felt very much more comfortable soon after the injections, and all tenesmus and hemorrhage had stopped. There was some slight diarrhea for a day or two after, and then steady recovery. The adrenalin solution had been previously given internally, but without obvious effect.—*British Medical Journal*.

TREATMENT OF ERYSIPELAS AND SEPTIC WOUNDS AND ULCERS.—Dr. W. Besdienthoff has treated forty-three successive cases of erysipelas in the Uglitch Hospital in the following manner: On the day of admission a laxative was administered and the affected parts were painted with ichthyol, also the surrounding healthy tissue. The painting was repeated daily until the temperature became normal and the inflammation disappeared. This generally took place on the second or third day. He sometimes used an ointment of the following composition: Carbolic acid, three drops; ichthyol, one half ounce; petroleum, one ounce. All the forty-three cases recovered without any complication. The ichthyol gave similarly excellent results in septic wounds and in ulcers. The ichthyol is painted around the wound or ulcer, while the wound or ulcer itself is painted with tincture of iodine. Even old leg ulcers heal rapidly under the energetic application of ichthyol and tincture of iodine.—*Aerztl. Praxis*.

CYSTITIS.—Howland (Med. News) states that cystitis is always caused by the presence of micro-organisms, chiefly the colon bacillus, streptococcus pyogenes and staphylococcus pyogenes. In the treatment of acute cystitis, he advises rest in bed, the use of opium and belladonna, either by the mouth or in the form of a suppository. In severe cases he instills into the deep urethra a few drops of a four-per-cent solution of cocaine. He does not recommend any local treatment to the bladder. In the chronic form he irrigates the bladder daily with solutions of salicylic acid, nitrate of silver or mercury bichlorid. Internally he employs urotropin in seven-grain doses as an antiseptic.—*Journal American Medical Association*.

Special Notice.

The Phosphates of Iron, Soda, Lime, and Potash, dissolved in an excess of Phosphoric Acid, is a valuable combination to prescribe in Nervous Exhaustion, General Debility, etc. Robinson's Phosphoric Elixir is an elegant solution of these chemicals (See third cover page, this issue.)

THE AMERICAN PRACTITIONER AND NEWS.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

THE INFLUENCE OF THE CERVICAL SYMPATHETIC UPON THE EYE, WITH TWO CASES OF PARALYSIS.*

BY WILLIAM CHEATHAM, M. D.

The cervical sympathetic supplies the dilatator pupillæ, the fibers of the lid which moderately dilate the palpebral fissure, and Müller's muscle, which closes the inferior orbital fissure, and is able to push the globe slightly forward. The pupillary fibers of the sympathetic leave the cord at the upper dorsal and lower cervical region, and going through the superior cervical ganglion enter the carotid plexus and pass through the ciliary ganglion in the orbit. Not all these fibers take this course, because even after the ciliary ganglion is extirpated irritation of the trunk of the sympathetic will dilate the pupil.

Noyes says the ophthalmic branch of the fifth, with other nerves, carry sympathetic twigs. Irritation of the cervical sympathetic causes mydriasis; paralysis of the cervical sympathetic causes myosis, slight ptosis, decreased tension, retraction of the eyeball, or enophthalmus, dilation of the temporal artery, congestion of that side of the face, with increase of warmth and perspiration, and headache on side of injury. Horner, and afterward his student, Nicati, first described these symptoms. Later that side of the face becomes paler, cooler, and sweats less.

In a case I have seen lately I thought there was also the Argyll-Robertson phenomenon, showing the reflex arc had been interfered with. In this case the reflex arc, running from the optic nerve to the

*Read before the Ohio Valley Medical Society, at Evansville, Ind., November 6, 1902. Read before the Louisville Clinical Society, October, 1902; for discussion see page 309.

oculomotor muscles, was interrupted, whereas the connection of the centers for the pupil, for accommodation and for convergence, which adjoin each other in the oculomotor muscles, were undisturbed. With these Argyll-Robertson phenomena the pupil is usually small, but it may be normal in size or enlarged. (Fuchs, page 26.) The Argyll-Robertson pupil, when small, is not a so-called simple myosis; it indicates, as stated above, a lesion higher up, possibly involving the communicating fibers of Meynert, going from the tubercula quadrigemina to the floor of the fourth ventricle, or a disease of the fibers which go from the optic tract to the pons cerebelli. The so-called reflex arc, as referred to before, is interfered with.

In the patient spoken of, this symptom, if present, has disappeared. The patient is a boy, fifteen years of age, who last spring had a saw-log roll upon him. He has paralysis of his left cervical sympathetic, with total paralysis of his left arm. His clavicle was crushed. He has in the left side of the neck quite an enlargement, which is closely connected with the spinal bones.

A second case I saw was exhibited by Dr. Bullitt before the Surgical Society, June 2, 1902. This was also in the person of a boy fifteen years old, who on April 8, 1902, received a wound from a 32-caliber pistol, the bullet entering on a line with the clavicle about an inch and a half from the sterno-clavicular junction on the left side. There was quite a hemorrhage from the wound, with a large accumulation of blood under the skin. Dr. Gilmer, who had the case, said the clavicle was fractured. Dr. Bullitt took an X-ray and found the bullet deep in the root of the neck, or in the thoracic cavity, one inch below the entrance and an inch and a half to the inner side of this point, and an inch and a quarter deep on the plane from before backward. Dr. Bullitt said this case had an aneurism from an injury to some of the vessels in the neck. He has all the symptoms of a typical case of paralysis of the cervical sympathetic on the left side; the symptoms came on gradually.

The most common external causes of sympathetic paralysis are trauma or pressure of aneurisms of the neck, enlarged lymphatics, fractures of the clavicle, etc. Disease of the upper part of the spinal cord, as tabes, or injury of that part of the cord, is among the central causes of cervical sympathetic paralysis. Paralysis of the cervical sympathetic causes but little or no annoyance, so may be often overlooked, which may account for there having been but few cases reported.

There are, of course, many causes for myosis, but it rarely has as a cause paralysis of the cervical sympathetic with its associate symptoms, exophthalmus, ptosis, and the other typical symptoms mentioned. There is but one stimulus that will cause reflex contraction of the pupil, and that is light. There are many which will cause the pupil to dilate. Neither myosis nor mydriosis cause much annoyance unless associated with some disturbance of accommodation.

Swanzy says: "Myosis may be caused by a diseased process irritating the pupil contracting center or nerve fibers, or by causing paralysis of the pupil dilating center or nerve fibers, or by a combination of both. Either cause alone would produce a medium myosis, the two together a maximum myosis. Irritation myosis is not increased by light, convergence of visual axes, nor diminished by shade. Mydriatics dilate such a pupil widely, myotics contract it to the maximum."

In paralytic myosis, such as we have in the two cases reported, the pupil reacts well to light or convergence, but will not dilate on application of sensitive stimuli or with co-ordinate motions. Mydriatics dilate such a pupil partially, while myotics will contract *ad maximum*.

Simple spinal myosis is found only in gray degeneration of the posterior columns of the spinal cord. Here the contraction is only medium, and the cilio-spinal center is involved, or as far up as the medulla oblongata; the pupil responds both to convergence and light. Later on Meynert's fibers become involved; then we have the so-called Argyll-Robertson pupil, that is, the pupil will not respond to light, but it does to convergence. The reason for this has been mentioned in the early part of this paper.

There are many other causes of myosis, such as the early stages of inflammatory affections of the brain and its meninges, intercranial tumors, tobacco amblyopia, etc., which I do not feel called upon to further mention in this paper.

The fact that section of the cervical sympathetic or removal of its ganglion causes myosis, with a soft eyeball or decreased tension, has led Abadie and others to think that such an operation would be of great benefit in a disease of the eye known as glaucoma, the chief factor of which is increased tension or a hard eyeball. This increased tension is said to arise from a stiff, unyielding sclera, or any factor which will cause a hypersecretion of intraocular fluid or interfere with the escape of fluids from the eye, or both. A non-surgical measure for the relief of this pathological condition is to produce a myosis by the use of eserin, pilocarpin, or other so-called myotics.

Without entering into a discussion of the many theories as to the causes of glaucoma, I wish to give here the present status as to the effect of removal of the cervical sympathetic ganglia upon this disease. It is believed by some that disease of these ganglia is a cause of glaucoma, by the effect it has upon the circulation within the eye. Glaucoma is to the oculist what appendicitis is to the surgeon and typhoid fever to the general practitioner, and I do not wish to precipitate upon you gentlemen a general discussion of this disease, so will not go deeper into the subject. In conclusion, then, I will, as stated before, endeavor to give in a concise manner our knowledge of sympathetec-tomy for glaucoma. The following I take from Gould's Year-Book of Surgery for 1902, page 580:

"Indications for Resection of the Cervical Sympathetic Ganglion. If in chronic simple glaucoma, in spite of myotics, vision continues to fail, or in failure to cure in the acute and chronic forms by iridectomy (Abadie); in glaucoma when iridectomy has failed, in hemorrhagic glaucoma early in the disease, in absolute glaucoma with pain, in preference to enucleation (W. J. Williams); in chronic simple and absolute glaucoma (Schimanowsky); in secondary glaucoma fulminans after iridocyclitis (A. L. Whitehead)."

Results of Resection. The later results of H. N. Dodd's first case of chronic glaucoma, reported a year ago, as also that of his second case, similarly treated, does not lead him to regard the operation as curative. In both cases the immediate effect was good; tension diminished, pupil contracted, vision improved, but after several months the conditions were the same as before operation.

In a case in which double iridectomy had been done years before, J. Mullem operated for chronic inflammatory glaucoma, with the result of increasing the size of the fields and reducing pain. The improvement was, however, only temporary, vision again declining and the pain returning. Mohr observed in three cases narrowing of the pupil, lowering of the tension, and marked widening of the field. In Schimanowsky's case vision had risen in two months in one eye from $\frac{1}{10}$ to $\frac{4}{10}$. A. L. Whitehead noticed that the tension sank immediately from $+3$ to $+\frac{1}{2}$, and this remained permanent. The patient could count fingers at eighteen inches. In Coover's case the results were: Tension lowered almost to normal; contracted pupil, increased vision and visual field, all of which gains were swept away by a subsequent recurrence of the disease three months later. The author believes this operation

of service in arresting the disease in the early stages only. F. F. Burghard's experience in three cases is valuable, not so much as concerns treatment as the careful study of the after-symptoms produced by the removal of the ganglion. Three symptoms were found constant: Ptosis, severe pain in the head on the operated side, and congestion of the facial vessels on that side. The ptosis was immediate and marked, and lasting in all, although it improved a trifle as time went on. The headache was variable in degree and duration. Foremost among the inconstant symptoms was the variation in the intraocular tension, being decidedly marked in the first case and absent in the other two. It is rather striking that in two of the cases there was no enophthalmus, and that in the remaining one there was exophthalmus.

From the Medical Review of Reviews, of October 25, 1902, I extract the following:

Sympathetomy for Glaucoma. Excision of the cervical sympathetic ganglia for glaucoma has been tried a number of times in America since Jonnesco introduced the operation in 1897. Dr. George F. Suker (Texas Courier-Record of Medicine) has reviewed the literature and comes to the following conclusions:

1. Sympathetomy is a justifiable operation.
2. Though the excised ganglion shows changes, yet the true relationship between it and glaucoma is an open question.
3. It is not a *sine qua non*, but a most valuable adjunctive procedure.
4. It is always indicated when iridectomy or sclerotomy in any form of glaucoma has failed.
5. Iridectomy is still the classical treatment for certain forms of glaucoma, *i. e.*, acute and chronic irritative.
6. It is the preferable procedure in glaucoma absolutum and hemorrhagicum.
7. Operate only on one side—affected side.
8. Employ the suitable medicinal treatment after the operation.
9. Do not extirpate the ganglion in acute inflammatory forms of glaucoma.
10. There probably is a close connection between the ciliary superior cervical sympathetic and glaucoma; what it is experiments will show.
11. Extirpation of the ganglion is indicated whenever there is increased tension not controlled by any other measure.
12. The results depend in a great measure upon the condition of the case.

13. Primary extirpation may have to be followed by iridectomy.

14. It is indicated in those cases of glaucoma which already have extremely poor vision, and where any interference with the eye proper might result unfavorably.

15. It is to be considered at all times when other operative measures are refused, irrespective of the form of glaucoma.

16. The excision of this ganglion has various effects upon the fundus oculi; none detrimental, however.

Compare Dr. Marple's summary (Medical Record) of the present status of the operation:

1. The operation of extirpation of the sympathetic ganglion is a safe procedure in the hands of a skillful surgeon.

2. That (as Ziehe says) while the material is not yet sufficient to reach a positive conclusion as to the permanence of its effect, it is nevertheless established that some of the glaucomatous cases have been improved for some months by resection; in others the condition apparently remains stationary. The results have varied, and one can not yet be sure in what cases it can be advantageously employed. It at least apparently does no harm. A considerable number of favorable results have been reported in chronic irritative and inflammatory glaucoma, as well as in simple glaucoma, in which oftentimes pain is abolished.

3. It does not replace iridectomy, but may possibly supplement the latter in case this is refused or has already resulted disastrously in the other eye, or is contraindicated, as in hemorrhagic glaucoma, dacryocystitis, etc.

4. Until our cases are observed more carefully and for a longer period of time it will be impossible to arrive at positive conclusions as to the indications for the operation or as to its permanent results.

I think Dr. Marple's summary explains the present status of sympathetectomy for glaucoma. Its application for the present must be in a comparatively few cases. In cases of hemorrhagic glaucoma, where for the present the operation seems the most applicable, it must not be forgotten that this tendency to hemorrhage is not purely a local affection; it is a local indication of a general circulatory affection, probably a sclerosis, so one should be careful of any or all surgery upon such subjects.

LOUISVILLE.

THE PRESENT STATUS OF RADIOTHERAPY AND RADIOGRAPHY.

BY M. F. COOMES, A. M., M. D.

Professor of Physiology, Ophthalmology, Otology, and Laryngology in the Kentucky School of Medicine, a Member of the American Medical Association, the Kentucky State Medical Society, and the Louisville Clinical Society; Ophthalmic Surgeon to Louisville City Hospital and the Kentucky School of Medicine Hospital; Consulting Ophthalmic Surgeon to Sts. Mary and Elizabeth Hospital; Ophthalmic Surgeon to St. Anthony's Hospital, etc.

In this age of marvelous inventions and wonderful discoveries in every department of science, none has proven more prolific of good to mankind than the development of electrical science. The mechanics of electricity and the many wonderful things accomplished through the aid of electrical mechanism is enough to confound the most stoical philosopher.

The transmission of the human voice over thousands of miles of wire, and its exact reproduction at the distal termination, is one of the most astonishing results obtained through the development of electrical engineering.

The intensifying and amplifying of sound is another of the marvelous results of the development of the science of electricity, but the most startling of all of the discoveries in connection with this science was that of the discovery of the X-ray by Professor Röntgen. The announcement was received at first with much misgiving on the part of the most credulous; but little time, however, was required to prove the truth of Professor Röntgen's assertions, and now all the civilized world is familiar with the X-ray. Its value to surgery was evident from the beginning, but none of us, not even the lucky discoverer, ever dreamed that the Röntgen X-ray was to be the formidable foe of one of the most fatal enemies to the existence of man, viz., cancer.

The mere mention of the fact of having at our command a harmless and efficient method of curing cancer in some of its forms, and the certainty of mitigating the suffering of all persons so affected, at first sounds like a fairy tale—a thing that might be told “the marines”—but the stubborn clinical facts that are presented daily set aside all doubt, and has established beyond all question that in the Röntgen X-ray we have a most wonderful and active therapeutic agent. The most astonishing feature about the whole therapeutic process to the uninitiated is the possibility of destroying the morbid tissues and leaving the

healthy normal tissues intact. This, however, becomes easy of comprehension when it is understood that the tissues which enter into the construction of the normal body have a very much higher resisting power than those going to make up morbid structures, such as epithelial cancers, etc.; that the normal tissues of the body, as skin, mucous membrane, and muscles, offer a much greater resistance to the action of Röntgen X-ray than the cancerous tissues, and as a consequence the X-ray will penetrate the skin or mucous membrane and destroy an underlying cancerous mass and cause it to be dissipated and removed by the absorbents in one instance. In other cases, where the growth is extensive, it breaks down and sloughing results, removing the morbid structures, leaving the normal tissues intact and in position.

The Physical Properties of X-rays and their Mode of Action upon Tissues, etc. The exact nature of the X-ray is yet a matter of speculation, but the following throws some light on the subject, rather in a conjectural manner, and is worthy of careful consideration:

Radiotherapy and Phototherapy. Freund (British Journal of Dermatology, September, 1902, p. 339) states that all the radiant phenomena have the same physical basis. The physical properties of rays as applied to the skin possess chemical, fluorescent, and electrical properties, the effect varying with the dosage, from mere stimulation to destruction of tissues. In weak dosages the rays favor organic processes, such as growth of hair and production of pigment, but in stronger dosage they lower vitality, produce inflammation or actual necrosis.

Radiant heat, light, electricity, and X-rays similarly influence cell-life. As to the clinical effects of radiotherapy, the physiological effects are in direct proportion to the intensity of the "raying," but are in inverse proportion to the wave lengths. The reactions appear after a latent interval, the length of which is also inversely proportional to the wave-lengths and intensity of the "raying." Those rays which have the property of exciting fluorescence are also physiologically the most powerful. The action of the rays is long-persisting. Freund believes that in so-called "D'Arsonvalisation" the effects are solely due to the spark-discharges accompanying the use of the apparatus. All spark-discharges may cause physiological effects, which may result from (a) the mechanical bombardment of the tissues, (b) the production of heat, (c) chemical effects—formation of ozone, and (d) ultra-violet ray formation. The effects of sparking vary according to its intensity, being either stimulating or destructive. On the skin they affect the vasomotor system and tend to cause necrosis of the epidermis.

The action of D'Arsonval's apparatus is superficial and due only to the accompanying spark-discharge, and is useful in pruritus, lupus erythematosus, acne vulgaris, and pigmentary abnormalities. A simple spark-

apparatus consists of a test-tube filled with water and connected with the negative pole of a coil, the positive pole being earthed. With this apparatus Brush-discharges can be obtained equal to those of Oudin's apparatus. The Brush-discharge is useful for widespread areas of disease and in the case of nervous people, the spark-discharge being applicable to more circumscribed areas. Treatment with the "electrified hand" is another spark-method, but a very mild one.

Dr. Milton Franklin, of New York (New York Medical Record, October 25, 1902), has this to say concerning the action of the X-ray:

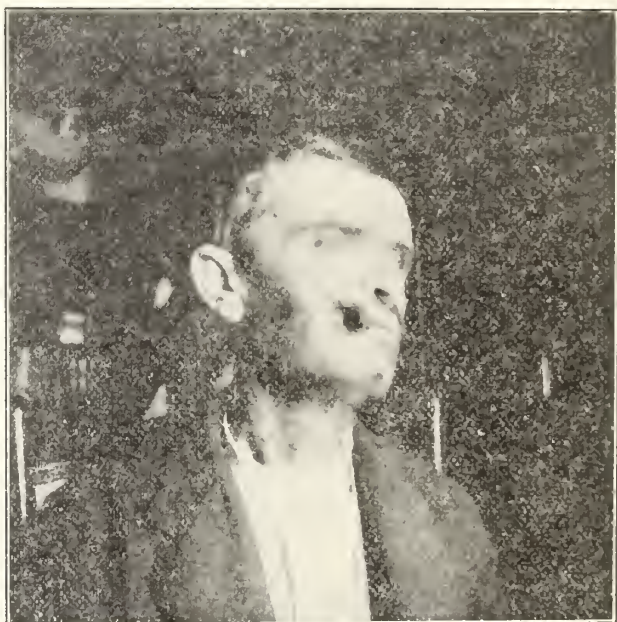
The manner in which the rays affect the tissues is a matter of vague speculation at the present time. Some think that the effect is produced by the projection of molecules into the tissues; some that it is electrical energy that is projected; some that the vibrations cause the tissue elements to oscillate in a cycle out of harmony with their regular molecular motion, thus causing a disintegration of the molecular structure; some that the X-ray produces the ultra-violet ray within the tissue by a process of interference; and finally, though probably not correctly, the action has been considered due to the setting free of ozone within the tissues by the rays.

The modern, and at the present time generally accepted theory, is that the rays are composed of negatively charged corpuscles or electrons. A fact of some significance is that M. Goldstein has demonstrated that at the place where the rays impinge there is formed a thin layer of ultra-violet light.

Herr Schmidt holds that the cathode rays have a marked reducing power, and do not act by producing ultra-violet light, but more probably by saturating the electrolytic valency of the substance.

The action of the X-ray is beautifully demonstrated in the case of Thomas Martin, whose two photographs accompany this article. The first is a photograph of the man before the X-ray was applied. This shows the face and lips much swollen and distorted and the right eye almost closed. The second shows the same man sixteen weeks later, after all of the cancerous tissue had been melted away by the X-ray, and reparation commenced by the open spaces filling up with granulations and the edges of the sore cicatrizing. If this man is not fully restored, that is, if the cancerous tissues have not been entirely eradicated, the X-ray has done for him what other therapeutic agents could not accomplish and what the surgeons would not dare to undertake with the knife. He has no pain, and his life has been prolonged. Just how long, time will tell, as we can not say at present what the final result will be.

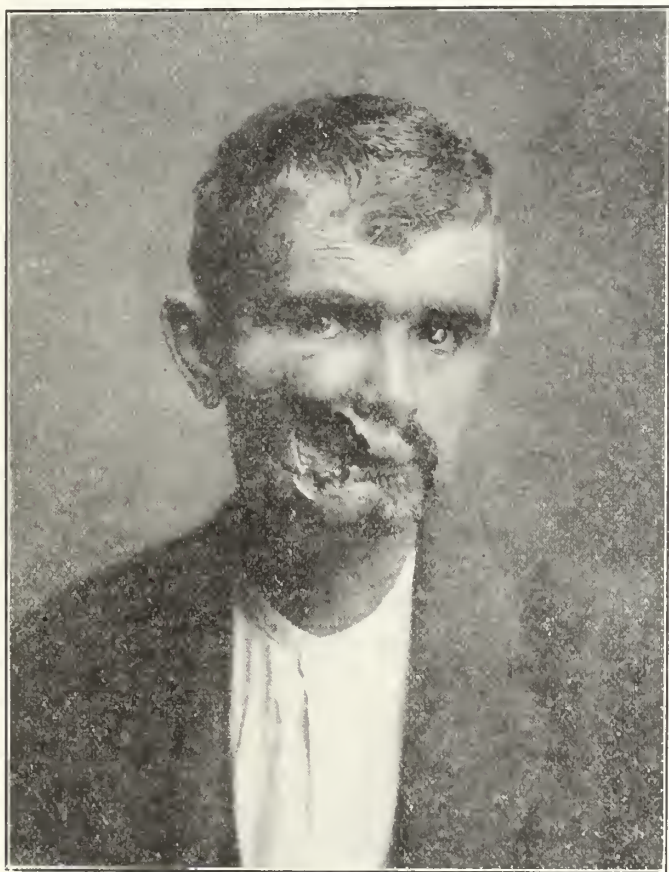
A further demonstration of the mode of action of the Röntgen X-ray is manifested in the destruction of the epiderm and the hair bulbs by exposure to its influence and the underlying structures remaining undisturbed, notwithstanding the fact that they were also penetrated by the same ray. These results all seem very wonderful, even to those of us who have observed the progress of the X-ray step by step in its action, from its advent into the arena of surgery and medicine up to the present time.



Each day makes it more evident that the X-ray is to play an active part in medicine and surgery. At this writing it is an established fact that it is probably the most efficient and reliable means of eradicating all superficial epitheliomatous growths.

In the treatment of certain forms of epidermal cancers Dr. Williams states his conviction that the X-rays are of value. His experience indicates that we have either in the X-rays themselves, or in some form of radiation from the Crooks tube, a valuable therapeutic agent in epithelioma, the beneficial action of which may be brought about without causing a burn. The earlier the treatment is undertaken the better. It is not improbable that we may find its curative action

limited to superficial growths, though as a means of relieving the painful features of disease in other forms it may be of some use. In cases where it is effective the odors disappear, discharge decreases, and the growth steadily diminishes in size.



The following is a report of the results obtained in the treatment fifty cases of cancer with the aid of Röntgen rays:

Dr. Charles Warrenne Allen, of New York City, said that laboratory experiment had shown that the Röntgen ray is a reducing agent. He thought that, aside from personal idiosyncrasy and the greater possibility of burning by the non-penetrating rays, there was a condition of tube and a degree of heat color in the anticathode which made a particular tube at a particular time likely to produce the so-called burn. Furthermore, the ray

undoubtedly had a predilection for tissues of embryonic structure, or those not strongly differentiated or highly individualized, and, if the expression might be permitted, on "cells out of place." The fifty consecutive cases forming the basis of this paper ranged in age between fifteen and eighty years. Twenty-two of them were males. There were thirty-three cases of epithelioma of the rodent ulcer type, and ten cases were cancers of the breast, seven of them recurrent. Only eight per cent were unimproved; twenty per cent were improved, but were still under treatment; twenty-six cases, or fifty-two per cent, had been discharged as cured. His conclusions were: (1) The X-ray possesses decided therapeutic power; (2) it may produce decided injurious effects aside from the so-called burn; (3) symptoms referable to the systemic effects may arise from the direct action of the ray, or indirectly by absorption of products of disintegration, which seemed at times to be thrown into the circulation more rapidly than they can be eliminated from the system; (4) carcinoma may develop in scar tissues following an X-ray burn; (5) the method is not to be used in all forms of cancer, and the indiscriminate use of this potent remedy should be discouraged; (6) by the proper use of shields dermatitis may usually be entirely avoided, and (7) the improvement under this treatment is better than can be effected at the present day by any other known method.

This admirable report of Dr. Allen, which is taken from the New York Medical Record of November 1, 1902, shows very conclusively that the X-ray is a powerful agent and a superior one as well in many respects.

Dr. William B. Coley, of New York City, is of the opinion that the X-ray will prove of service as an adjuvant rather than a substitute for operation in cases of cancer. This statement does not refer to rodent ulcer and superficial cancers. He reports having treated, since February, sixty-eight cases of cancer at the General Memorial Hospital, twenty-five cases being sarcoma and seventeen recurrent carcinoma of the breast. They could not be reported as cured at this time simply because they had disappeared under the X-ray treatment. For example, one case that had been reported by another physician as a probable cure had recurred in the lung, and had caused death about three months later. His experience had been that many of these cases recur in a short time. The greatest future of this treatment seemed to be as a prophylactic agent used immediately after every operation for primary carcinoma.

The report of the following case and conclusions as to the value of the X-ray is by Emil H. Grunbe, B. S., M. D., Professor of Radiography, X-ray Therapeutics, and Electrophysics, Illinois School of Electro-

therapeutics; Chief Radiographer, Illinois X-ray and Electrotherapeutic Laboratory, etc.:

Case 7. Mrs. E., aged fifty-two years. Early in the year 1900 the patient complained of pain in the pelvic region. On consulting several physicians the diagnosis of cancer of the uterus was made and operation was recommended. Operation for removal of entire uterus was performed March, 1900. Following this operation a persistent discharge was noticed. The patient took a severe cold in the month of December, 1900, and symptoms of congestion appeared in the pelvic region, followed by the development of an abscess, which broke and discharged through the vagina. Discharge continued offensive, with occasional very profuse hemorrhages. A second operation was recommended and performed by a prominent surgeon in May, 1901. On making an incision the surgeon found that the cancer had returned, and was so extensive in character that he decided not to remove anything. The wound was closed, and the husband was told that nothing could be done to save his wife's life, and that she would probably die within a month. During the last week of May, 1901, patient was brought to Chicago and X-ray treatment was undertaken. Daily treatments of ten minutes' duration were given, and at the end of two months the patient had gained twenty-two pounds, was free from pain, and the foul discharge had almost entirely ceased. At the end of three months she was discharged symptomatically cured, and she remains so to this writing. During the past eleven months she has gained thirty-five pounds, and writes "I continue to keep well; have not felt so well in years."

1. The X-ray is the most remarkable therapeutic agent of the last decade.
2. In properly selected cases of so-called "incurable conditions" the X-ray has brought about remarkable results.
3. Relief from pain is one of the most prominent features of the treatment.
4. Retrogressive changes are noticed in all primary cancer or tuberculous growths.
5. The X-ray has a pronounced effect upon internal cancers.
6. The greatest value of the X-ray is obtained in treating post-operative cases to prevent recurrences.
7. The proportion of clinical cures by this treatment is greater than that obtainable by any other method of treatment.
8. We are positively justified in assuming an idiosyncrasy to X-rays.
9. The peculiarities of each case must be studied in order to get the best results; that is, no strict rules for treatment can be laid down.
10. Dermatitis, if properly produced, is within certain limits a desirable feature of X-ray treatment.
11. Since the vacuum of an ordinary X-ray tube changes constantly, such tubes are useless for radiotherapeutic work, and only tubes which allow of perfect control of vacuum should be used.

12. The X-ray has a selective influence upon cells of the body, abnormal cells being affected more readily than the normal.

13. Hemorrhages and discharges are decidedly lessened, and ultimately cease in the majority of cases.

14. Even in the hopeless, inoperable cases the X-ray prolongs life, makes the patient comfortable, and the last hours free from pain.

The use of the X-ray is, without doubt, a very valuable addition to the therapeutics of malignant diseases, and can not demand too much attention from the progressive physician.

Whatever may be the real action of the X-ray in these diseases, the results obtained certainly have been astonishing, and while it would be premature to claim that malignant diseases can positively be cured, it is to be hoped that further investigations may surpass our expectations.—*New York Medical Record*, November 1, 1902.

Dr. W. A. Pusey (*Journal of Cutaneous and Genito-Urinary Diseases*, May, 1902), reports eleven cases of acne vulgaris and one of sycosis vulgaris treated by exposure to the X-rays. In no case of acne in which such treatment has been carried out for a reasonable period have beneficial results failed to appear, and the author considers this form of treatment an advance over all other methods hitherto employed. All the cases were exposed to a very weak light, using a current just strong enough to illuminate a fairly soft tube. The cases were unusually susceptible, and upon the first sign of erythema or pigmentation the treatment was suspended. The author warns those wishing to use this method of treatment against employing any but the weakest light. In a case of sycosis treated in this manner, all evidence of disease had disappeared at the end of three months, and no new lesions have appeared since.

It seems to matter but little from what source the X-ray is obtained, that is, whether it is by the use of a coil or a static machine such as that made by Frank S. Betz & Co., of Chicago, Illinois, the important point being the bringing about of reaction in the diseased tissue without producing a burn.

LOUISVILLE.

THE PRESENT STATUS OF BRAIN SURGERY.*

BY H. J. WHITACRE, M. D.

Surgeon to Christ's Hospital, Surgeon to Clinics Medical College of Ohio, and Consulting Surgeon to Speers' Hospital.

The surgery of the brain is a subject which has many view points of interest. Anatomically, the brain presents a complexity of structure that baffles all but the most ardent specialist. Physiologically, we are very largely in the dark except for limited areas. Clinically, the position of the brain within its bony casement, when taken in conjunction with the anatomic and physiological uncertainty, surrounds the diagnosis of pathologic lesions with unusual difficulties. Surgically, the introduction of asepsis into the operative technique has given results from operative treatment that furnish some of the most brilliant achievements of modern surgery.

Should I select from these view points the one which I consider the most important I should certainly select that of diagnosis, since the entire success in the treatment of cerebral conditions must depend upon the accurate determination of (1) the presence of a lesion within the cranium, (2) the exact location of the lesion, and (3) the nature of the pathologic process. Such diagnosis must precede all surgical treatment.

I have chosen for my theme to-day, however, a subject which must stand at least second in position of importance to that of diagnosis, and one which is essentially practical, namely, the brief consideration of those operative procedures which are applicable for the relief of pathologic conditions in this organ. The manner of relieving surgical diseases of the brain will, therefore, be the subject that I wish to open for the discussion of the Society, yet I find it difficult to get away from the question of diagnosis, and believe that it will be profitable for us to review, for a moment, the important physiologic facts of localization.

All diseased conditions within the brain give us symptoms which may be divided into the general and the localizing symptoms. The general symptoms of brain lesion are headache, vomiting, vertigo, choked disk, mental deterioration, unconsciousness, etc., symptoms which indicate to us that there is a grave pathologic lesion within the cranium, but which tell us nothing concerning the location of the lesion in the brain-structure nor the exact nature of the pathologic process. The localizing

* Read before the Ohio Valley Medical Association, May, 1902.

symptoms of brain lesion are those that result from the irritation or the destruction of a definite area of the brain cortex, whose function is accurately known. For instance, we know with certainty that the motions of the right thumb are controlled by a circumscribed area of cortex in the center of the ascending parietal convolution of the left hemisphere of the brain. Should an attack of Jacksonian epilepsy begin with spasm in this thumb we know with certainty the exact location of the lesion, and can make a trephine opening in the skull three fourths of an inch in diameter which will expose the lesion. A paralysis in any muscle, or set of muscles, will speak for a paralyzing pressure or the destruction of that portion of the cortex which governs these muscles.

It becomes at once apparent that while the general symptoms are indispensable to the diagnosis of a brain lesion, it is the localizing symptoms that make surgical intervention possible. Without localizing symptoms we are entirely in the dark and can not know where to cut, therefore it must naturally follow that a knowledge of the anatomy of the brain and the anatomic seat of the known physiologic functions becomes a matter of prime importance. A brief description of the location of the known sensori motor areas has been given in a paper presented before the Cincinnati Academy of Medicine in March, 1902.

The next point of importance will be the accurate location of these known fissures and areas on the surface of the patient's scalp and skull, in order that we may cut in just the right place to find the lesion. This is determined by certain very simple measurements made from fixed lines connecting bony elements and the skull as follows:

The simplest system of cranial topography begins with two fixed lines: (1) Reid's base line, which passes through the lower margin of the orbit and the center of the external auditory meatus; and (2) the median sagittal line, which connects the root of the nose and the occipital protuberance. The fissure of Rolando is bounded by the accurately known motor areas, and its localization will occupy a position of first importance. To find this fissure, measure the distance from the root of the nose to the occipital protuberance, divide this figure by two, and add one fourth of an inch (or take a point 0.557 of the distance back upon the sagittal line). This represents the upper end of the fissure. The fissure extends downward and forward from this point at an angle of sixty-seven degrees with the median sagittal line, and if two strips of metal, fixed to each other at this angle, are placed on the head in

such a way that their junction lies upon the upper end of the fissure and one strip on the median sagittal line the other will lie over the fissure of Rolando. The fissure is about three and one half inches long. In its lower third it becomes a little more vertical than the strip.

To find the fissure of Sylvius lay down a second line parallel to Reid's base line from the external angular process of the frontal bone. Measure backward one and one fourth inches on this line, then one fourth inch upward, and we have point one, or the lower end of the fissure. Next locate the most prominent point of the parietal eminence and drop a perpendicular to Reid's base line. A point on this perpendicular line three fourths of an inch below the point of the eminence will mark point number two. A line joining points one and two will lie over the fissure of Sylvius. The fissure is about four inches long. Its anterior perpendicular limb lies two inches behind the external angular process.

To find the parieto-occipital fissure, the line overlying the fissure of Sylvius is continued backward until it intersects the median sagittal line. This point of intersection marks the position of the fissure.

The further localization of fissures and areas in the brain does not seem necessary, first, because the brain areas now open to surgical operation are in definite relationship to these three fissures; and second, because modern cranial technique demands that large areas of brain be exposed in any operation on the brain, and fissures may be located by actual inspection.

In the previous paper referred to on "The Diagnosis of Surgical Conditions within the Cranium," a division of intracranial lesions was made into two general classes: (1) Those lesions which are the immediate result of trauma—fracture of the skull, bullet wounds, hemorrhage, and concussion; (2) those lesions which are not the result of trauma, a class which will include brain tumor, abscess, syphilis, tuberculosis, echinococcus, epilepsy, cysts, dilatation of the ventricles, etc.

It would seem wise to follow this same classification in dealing with the operative side of the question, and I will accordingly consider the subject in this manner.

Traumatic Lesions of the Brain. The question of fracture of the skull is one that possesses a very high degree of importance. Fracture of the skull should in reality not be classed with fractures at all, but with injuries to the brain, since the importance of the injury lies almost

wholly in the associated injury to the brain and its membranes. Stimson divides injury of the skull and brain into three classes:

1. Those in which there is extensive contusion of the brain, with or without a fracture. The fracture is usually linear, runs downward to the base, and extensive hemorrhages occur on the surface of the brain. The causative violence acts broadly upon the skull, modifies its shape extensively, or bursts it and bruises the brain by reason of this modification of shape.

2. Those cases in which there is a circumscribed fracture, with or without injury of the brain or meninges. The fracture is usually a compound, circumscribed, depressed fracture. The causative violence is that of a blow such as would be given by a hammer, in which the force is consumed in breaking the bone at the point of impact. There is no change in the shape of the skull, no diffuse effect upon the brain as a whole.

3. Those in which the causative violence is of the same nature but of much greater force than in Class 2, but in which the effect upon the contents of the cranium are those of Class 1. Large areas of bone are fractured, and the force is not exhausted in producing the fracture.

In Class 1 the fracture is a mere incident; it has no influence in the progress of the case, and gives rise to no therapeutic indications except when the middle meningeal artery is ruptured.

Classes 2 and 3 will furnish the most definite indications for intracranial treatment, and this treatment will usually be directed to the seat of fracture. Without exception, every injury to the head which has resulted in the rupture of the scalp must be examined for fracture, and this examination should be conducted under the most pedantic observance of the principles of asepsis. The hair must be removed in the region of the wound, and the instruments and the hands must be sterilized.

The presence of a linear fracture, in the absence of symptoms distinctly referable to such fracture, does not usually call for operative interference, but will always place this patient in a class that demands the most careful observation. It should always be remembered in dealing with this class of fractures that the skull is very elastic, and fractured edges which are in close apposition at the time of our examination may have been separated by one fourth of an inch at the moment of injury, and that infection may have been introduced within the cranium, or some vessel may have been ruptured which will give rise to

serious cerebral compression. Furthermore, small fragments from the inner table of the skull alone are often broken off in such a linear fracture and driven into the brain cortex, to furnish one of the common causes of Jacksonian epilepsy, and this without the slightest external evidence of such occurrence.

The presence of a compound depressed fracture invariably demands an operative procedure for the elevation or removal of the depressed fragments, a thorough exploration of the surrounding bony edges for sharp spicules, and a definite determination as to the presence or absence of extra- or intradural hemorrhage. The exposure of the skull surface should usually be well beyond the limits of the fracture, and when a trephine opening must be made in order to get under the fragments it should be made in solid, non-fractured skull just at the edge of the fracture, and I think always with a beveled trephine. The slight degree of depression without symptoms that is found in some cases can not be considered to be relatively safe if undisturbed. All cases of depression, whether compound or simple, must be treated by surgical operation and the elevation of the depressed bone. When there has been much laceration of the brain, good drainage should be provided in all such cases.

Cerebral Hemorrhage. Hemorrhage within the cranium gives the most imperative indications for craniotomy and the ligation of the bleeding point, whenever it can be determined that this hemorrhage has occurred on the surface of the brain.

When called to see a patient who has recovered consciousness after a head injury, and has subsequently gone into a second period of unconsciousness, we may rest assured that this patient is suffering from an intracranial hemorrhage, probably from the middle meningeal artery. The injury has caused a fracture of the skull, which may be linear and impossible to detect, and the position of this artery within its bony canal makes it almost impossible for it to escape laceration when any fracture runs across it; hemorrhage takes place from the ruptured artery, and the blood collects between the dura and the cranium at the seat of vessel injury. The dura is rather firmly adherent to the inner surface of the skull, however, and considerable force, therefore considerable time, is necessary, for the accumulation of a clot of blood sufficiently large to cause pressure on the brain. During this time (one hour to ten days) the brain has recovered from the concussion and consciousness has returned, but the moment that a sufficient

amount of blood has accumulated between the dura and the skull to press on the brain a progressively increasing coma and usually a pronounced hemiplegia will reappear and continue until the time of the death of the patient. It can be safely stated that 98 per cent of cases of extradural hemorrhage in which the brain is not seriously injured can be saved by timely operation, while the majority of such cases will certainly die if treated medically. It therefore becomes an imperative duty to operate on all cases of extradural hemorrhage.

When the hemorrhage results from a rupture of pial vessels, and the resulting clots lie directly on the surface of the brain, the period of consciousness between the unconsciousness of the concussion and that of compression will usually be much shorter, or absent altogether. I recently operated on a patient, however, who was accidentally shot while hunting, who walked one mile to his home, then became gradually unconscious. A clot of blood the size and thickness of an adult hand was removed from the surface of the brain, and a pial vessel tied. The patient recovered. This class of cases will not usually yield as good results as those given by operations done for extradural hemorrhage, since the injury to the brain is always more serious, yet the surgical demands are none the less imperative.

Idiopathic hemorrhage in the brain is very rarely open to operative treatment, since the majority of sudden apoplexies are due to hemorrhage within the substance of the brain, or to thrombosis or embolism of the larger arteries. A diagnosis between cerebral hemorrhage and thrombosis or embolism is certainly very difficult when undertaken at the bedside.

Gunshot Wounds. Gunshot wounds form a large class of head injuries, concerning the surgical treatment of which there is a considerable difference of opinion. There are several features to be taken into consideration in the discussion of this subject:

1. Antiseptic and aseptic technique.
2. The brain injury, the question of prime importance.
3. Hemorrhage resulting from the division of the blood-vessels or the venous sinuses.
4. Splinters of bone formed about the wound of entrance.
5. The presence of the ball within the brain.
6. Infection of the brain wound.

The antiseptic and aseptic technique of gunshot wounds will in reality constitute the entire treatment in a majority of cases. Every

patient who has been shot, no matter what the nature of the injury or the subsequent conduct of the treatment, must be sterilized in a most rigorous manner. The entire head must be shaved, scrubbed, and sterilized, and the wound must be most thoroughly washed with an antiseptic solution. Should the operation be postponed, or should the non-operative method of treatment be adopted, the entire scalp, and particularly the wound, should be carefully covered by a wet 1-5000 bichloride dressing, which is held in place by a firm bandage. It will be noted that probing the wound with the much-abused clean probe has not been mentioned as a part of this technique.

The wound to the brain tissue is the condition of importance, yet it is very apparent that operative treatment directed to the repair of the injury to the brain is entirely out of the question, since brain tissue does not regenerate and wounded surfaces are in as close apposition as it is possible to get them.

Hemorrhage from the bullet wound furnishes the most definite indication for operative treatment. This hemorrhage may take place from the scalp, the meninges, from a ruptured sinus, or from the track of the bullet through the brain. Hemorrhage from the scalp can be controlled by pressure until the head can be sterilized; then the wound should be enlarged and the bleeding scalp vessel clamped and tied. Hemorrhage from deeper seats must be treated by craniotomy. The patient may be operated on without an anesthetic if in deep coma, but chloroform will usually be required. The bullet-hole in the skull may be enlarged by means of the DeVilbiss forceps, or a button of bone may be removed with a trephine. A bleeding middle meningeal or pial vessel must be located, clamped, and tied after enlarging the opening in the skull sufficiently to give free access. One of the most important advances that has yet been made in the technique of brain surgery is the insistence upon a liberal opening in the skull, through which a large area of brain can be inspected and palpated, and through which the necessary manipulation can be conducted. Liberal removal of skull is therefore recommended.

Should the hemorrhage following gunshot wound proceed from one of the venous sinuses, such sinus should be freely exposed and packed tight with iodoform gauze. This gauze may be cautiously removed in three or four days and the sinus repacked if hemorrhage recurs.

Bleeding from the track of the bullet through the brain is most efficiently treated by introducing a wick of gauze through the track

with a narrow probe. This strip of gauze will serve the additional purpose of giving good drainage, an extremely important element in traumatic brain surgery.

In the absence of other indication for operative interference, the presence of some splinters will often call for an enlargement of the bullet-hole in the bone, the removal of all loose fragments, and the establishment of drainage down to the brain.

The presence of a ball within the cranium does not in itself demand operative procedure, and in the absence of symptoms referable to one of the complications mentioned I do not believe that we are justified in operating merely to recover the bullet. The patient is already profoundly shocked by the brain injury, and further shock of an operation, which may be fruitless, is not justified, in view of the frequency with which bullets remain permanently within the cranium without giving rise to infection or to irritating symptoms. Should an encysted bullet give symptoms after the recovery of the patient then is the time to remove it, when the patient is in normal health.

From these remarks it will naturally be inferred that probing for a bullet in the brain is not justifiable as a routine procedure. There are certain conditions under which I can conceive of such probing as wise, but I would make the dogmatic statement that a bullet wound in any part of the body should never be probed except as a part of an operation conducted from start to finish according to the strictest rules of asepsis. The use of a probe from the pocket-case to establish a diagnosis or to locate the bullet in a patient seen for the first time, even though this probe be dipped in carbolic solution or bichloride, I believe to be an extremely dangerous procedure. Should there be reason to believe that the bullet is easily accessible, and should the appropriate probe (the Fluhner aluminum or the Girdner electric probe) be at hand, then a brief tentative search may be made during such aseptic operation and the bullet removed if found. The brain tissues are so soft, however, that it is extremely difficult to follow the track of the wound with any probe, and false passages may easily be made. Each false passage inflicts an injury on the brain comparable to the original injury of the bullet, and lessens by so much the chances of the patient for recovery. Furthermore, the localization of the ball by the X-ray will entirely replace the probe in those cases which are accessible to such an apparatus.

The question of infection must always occupy a prominent position in the conduct of a gunshot wound. The sterilization of the scalp has

been dwelt upon, and it has been insisted that the wound be cleansed of gross dirt and sterilized by antiseptics as far as possible. It only remains to state that our most certain safeguard against serious infection is liberal provision for drainage.

Non-traumatic Lesions. It is the second great class of brain lesions which will furnish us the knotty questions of brain surgery. Here we must rely entirely upon localization symptoms for correct information as to where we will find the lesion. The variation in the symptoms of the diseases included under this heading are so great that any operative procedure must often partake of the nature of an exploratory incision, and finally, most of the lesions included under this class are in themselves grave conditions which are usually fatal.

Permit me to refer again to a previous paper and quote a clinical division of this type of lesion into four groups, as follows:

1. Those cases in which no characteristic symptoms have been present during life and the lesion is found post-mortem (this may occur in tumor, abscess, syphilis, tuberculosis). These cases are to be explained: (*a*) There may have actually been no symptoms, (*b*) the patient may be seen for the first time in coma and without a history, (*c*) the symptoms of the head lesion may be masked by a complicating disease, or (*d*) in receiving our history of the case we may be misinformed concerning the very symptoms that we would rely upon, owing to the imperfect observation of both the patient and his family.

2. Cases in which a definite diagnosis as to the nature of the lesion may be made, yet its location can not be determined. A large number of tumors will fall under this class, for the reason that our knowledge concerning the function of the definite portions of the brain is as yet very imperfect. All lesions located in the frontal, post-parietal, occipital, and cerebellar regions will of necessity present no localizing symptoms.

3. Cases in which the symptoms presented will not only make it possible to render a positive diagnosis as to the nature of the disease, but also will indicate with fair accuracy its exact site in the brain. It is perhaps unnecessary to state that almost all of the operable cases of brain lesion must belong to this class.

4. Cases in which the symptoms make a diagnosis of intracranial lesion certain, yet in which they do not give information concerning either the nature or the location of the process.

It is apparent that Classes 2 and 4 will form the bugbears of surgical and medical practice.

The above division has been made of the non-traumatic cases, yet, as has already been stated, it sometimes becomes quite as important that we should arrive at definite conclusions regarding the more obscure traumatic cases. The practical points that I wish to make in this division of cases are these: (1) All cases must be thrown into Class 3 before they can come within the possibility of relief or cure (syphilis excepted), since cure can come alone through surgical intervention; (2) just in proportion as we perfect ourselves in methods of accurate diagnosis, so will we increase the number of cases that are brought under Class 3, and diminish the number that are included under the more or less hopeless Classes 2 and 4.

Brain Tumors. It has not been many years since the entire interest in a brain tumor ended with the diagnosis, yet at the present time the researches into the pathologic nature of brain tumors, their varieties, situations, and frequency, the perfected means of localization, a perfected technique, and the complete control of bacterial invasion by aseptic operative methods, have placed this department of brain surgery upon a permanent basis and given some of the most brilliant results of surgery.

The variety of tumors that are open to surgical intervention are the tubercular, sarcoma, glioma, gliosarcoma, cysts, carcinoma, and gumma. The most common tumor of childhood is the tubercular, of adult life the sarcoma, while gliosarcoma occurs with about equal frequency in both childhood and adult life. Echinococcus and hydatid cysts are extremely rare in this country, and carcinoma is a great rarity. Gumma usually develops in adult life, and is of such frequent occurrence that we do not feel that this form of tumor can be absolutely ruled out until the patient has been subjected to an eight to sixteen weeks' course of specific treatment.

The situation of the tumor in the brain structure is a matter of extreme importance, since it is only those tumors lying in the cortical layers of the cerebrum and cerebellum, or in the immediately underlying white matter, that are open to surgical intervention. Tumors of the cerebral axis (medulla, pons, crura, basal nuclei, etc.) can not be reached by the surgeon, and Starr has shown, from collected cases, that 30 per cent of cerebral tumors are located in this region. Multiple cerebral tumors constitute 10 per cent of all cases in this series, and these again are evidently inoperable. To avoid further multiplication of statistics, it may be stated that the present figure given for the percentage of brain tumors which are accessible and removable is about

ten. Ten per cent of all tumors is certainly very small, yet it must be remembered that these figures represent autopsy as well as operative findings; that many of these cases included in the statistical tables occurred previous to the period of modern localization and diagnostic accuracy in this region, and that many tumors which would have been operable at the time of first observation became inoperable by their continued growth up to the time of the death of the patient.

It is interesting to note that these statistics show the location of this 10 per cent of operable cases to be extremely favorable to removal. Seventy-five per cent of the operable cases are located in the two convolutions that bound the fissure of Rolando, the motor area; 9 per cent in the frontal, 2 per cent in the occipital, 3 per cent in the temporal lobe, and 10 per cent in the cerebellum.

It must be stated, then, that while many operations for brain tumor must be largely in the nature of an exploratory incision, that the majority of the operable cases are favorably located for removal; that the percentage of recoveries is about 82 in those cases that are favorably located in the motor area, 60 per cent in the frontal, 66 per cent in the occipital, 75 per cent in the temporal lobe, and 50 per cent in the cerebellum; that the majority of tumors occurring in adults are of a circumscribed nature, which would make their removal favorable, and that the removal of the infiltrating variety of tumor will often prolong life and thereby become a justifiable operation.

The question of the operative treatment of brain tumor therefore becomes a very important consideration in every case that presents itself for treatment. While no operative interference should ever be advised or executed without the most careful study of all general and localizing symptoms that may be brought to bear on the question of diagnosis, and without a thorough use of antisiphilitic treatment when a syphilitic lesion may be present, I believe that exploratory incision of the skull should be placed in the same category as exploratory incision of the abdomen for diagnosis. An exploratory incision of the skull done under the rigid observance of modern aseptic methods does not subject the patient to great risk, and when we are reasonably certain of the presence of a lesion in a definite brain area this area should be exposed to view, palpated, explored, and a positive diagnosis made. We may even fail to find a removable tumor by exploratory incision, yet we are dealing with a hopeless disease, and every proper attempt should be made to save the lives of these patients.

Reports of Societies.

THE LOUISVILLE CLINICAL SOCIETY.

Foreign Body in the Eye: Sympathetic Paralysis. Dr. William Cheatham reported two clinical cases, as follows:

Mr. G. came to the city Thursday afternoon. While working as a section hand for the L. & N. R. R. Co. he had received an injury to the eye by a piece of steel lodging in it. I saw him Friday at the request of Dr. G., and found a piece of steel buried in the inner part of the iris. With a small knife I made an incision over the piece of steel, and tried the use of a small magnet, which did not seem to affect the steel. I then removed the piece of steel with forceps, and in so doing had to take off a piece of the iris, adherent to the piece of steel. It looks to me as if he would make a good recovery.

The next case I present is that of a boy from the mountains, a patient of Dr. Butler's. It is a case of sympathetic paralysis. His arm was paralyzed by a blow that crushed the clavicle. As you will observe, the lid slightly droops. I discovered myosis and the eye somewhat sunken, also a sinking-in of the face.

Discussion. Dr. M. F. Coomes: The first case is very remarkable, as there are so many reactions following such an accident. The very remarkable thing is the rapidity with which the blood-clot is being absorbed, ten to fifteen days usually being required for its absorption in such cases.

Dr. S. G. Dabney: I think the most fortunate incident in the first case is that the eye seems to have escaped all injury save that involving the iris. The boy may have traumatic cataract. This brings up again the question of the use of the magnet. Smaller magnets are not so good for the purpose, not being so certain, in removing foreign bodies from the anterior chamber of the eye.

Dr. G. B. Young: I report the case of a colored man at the hospital. A long hat-pin had been driven into his forearm and broken off short. About ten days afterward I cut the arm back of the biceps. The pin was imbedded under the skin, and I had to cut down about a half inch to get hold of the end of it. I call attention to the distance the

body, considering the size of it, had traveled in ten days. The patient experienced no inconvenience, although a lump appeared.

Dr. Ewing Marshall: The case of foreign bodies is very often annoying, because people come with imaginary foreign bodies and demand that you shall operate for them, and it is often difficult to persuade them that an operation is not needed, or that if a foreign body is present an operation may do more injury than would occur if the body should be left and no operation performed, as it will most likely travel and come to the surface.

Two Cases of Epithelioma and a Case of "Black Eye." Dr. M. F. Coomes reported two cases of epithelioma, and a case of "black eye" as the result of a blow, in which he had used the ultra-violet ray as produced by the Minin apparatus constructed by Frank S. Betz, of Chicago. One case of epithelioma had been sloughed out by the use of X-ray, and did not seem inclined to heal until exposed to the ultra-violet ray. The other case of epithelioma was on the lower lip, the open surface being on the mucous surface. In both of these cases the healing process became very marked after the first few exposures.

In the case of "black eye" as the result of a blow, the changes were marked in a very decided manner. The color change was easy to determine, the blackish-blue tint giving way to a dark red and finally a rose tint, and then down through all of the shades until all evidences of the extravasation had disappeared, which was at the fourth sitting. The sittings took place every day, under a No. 2 lamp, beginning with ten minutes the first day and increasing five minutes at each exposure. I am satisfied that there is something in the Minin light.

Discussion. Dr. G. B. Young: I remember that when I was a small boy the people of the United States went crazy over the blue-glass cure. It seems they really knew something.

Dr. S. G. Dabney: I should like to report two cases of amblyopia. The first is an ordinary case of tobacco amblyopia. It is that of a man between forty and fifty years of age. He had been an excessive smoker, using twenty to twenty-five cigars a day. I stopped the use of alcohol and tobacco and put him on iodide of potash and strychnia, but did not inject it into the temple. The patient, when he looks directly at a small spot, as of blue or red, can scarcely see it, but when moved a little to one side he sees it distinctly. The man is not improv-

ing. In a majority of cases they make a satisfactory recovery. It is not probable that he will improve after this time.

A gentleman of about fifty years of age came to see me about two and a half weeks ago, complaining that he could see a cloud just in front of him. His sight was reduced about $\frac{20}{100}$. Examining his sight, I found that he could not see a light spot when looking directly at it, but could see it when it was slightly to one side of him. He had very little pain and complained of numbness about the eye. I pushed the treatment on him vigorously and gave him strychnia. He is making an excellent recovery.

Dr. William Cheatham: I did not hear the doctor mention whether the pupils were normal. In the case of tobacco poisoning the pupils are usually contracted. In such disease I give strychnia hypodermatically. I suggest also the addition of nitro-glycerine. Some of the cases I have had of nicotine poisoning did not improve until after I had given the nitro-glycerine, which I use in tablet form. After recovery relapse is rare, although they may go back to their old habits.

Dr. M. F. Coomes: I was very much interested in what Dr. Dabney had to say. I want to mention two cases, one that of late Major Kinney. He was an exception to the rule, as he could take strychnia and get over his trouble, and afterward it would come on him again, when he would again take strychnia until he recovered sufficiently to read. The other case is very similar to the one just mentioned. He used only a small quantity of tobacco, and would take about an ounce of whisky before breakfast and smoke from two to five pipes of tobacco in twenty-four hours. I stopped his smoking and drinking and gave him strychnia, and he was soon able to be back at work again. But he returned to his former habits, and in five or six months he was back in the same condition. These are the only two cases I have known where there was a return.

Dr. G. B. Young: As to the inability of the patient to see blue or red spots, the question arises as to what effect it may have in an examination for color-blindness. If the object be thrown to the right or left he may distinguish the color, but if directly in front of the eye he might be unable to distinguish it, and for this reason a mistake might be made in the diagnosis. I had the case of a young man who applied for steamboat license. He had already served for several years, and had passed an excellent examination as to his general qualifications. I found him almost totally green-blind. He had never suspected it.

He was a tremendous user of tobacco. I have since determined that when I have cases of this kind I should test the patient by having him look at the object while it is directly in front of him.

Dr. S. G. Dabney: I think this man's sight has become worse. When I first noticed it it was $\frac{20}{100}$; it began with $\frac{2}{7}$. He does not live in the city, but travels about considerably. I use the nitro-glycerine as a temporary stimulant. If used three or four times a day it may have a permanent effect. I consider its use more beneficial in diagnosis than in treatment. I should not expect a great deal of it in treatment.

The essay of the evening, "The Influence of the Cervical Sympathetic upon the Eye," was read by William Cheatham, M. D. [See page 281.]

Discussion. Dr. M. F. Coomes: I had a patient who was injured about the head and neck by a tree falling on him. In this case the eyeball was sunken, all of the symptoms were typical, but I did not recognize then, as I do now, the connection between the sympathetic nerves and the typical symptoms presented. Among those things that we have overlooked is the fact that we have a very important means of relieving glaucoma. Until two years ago I did not have much faith in it. I am thoroughly convinced that removal of the cervical sympathetic ganglia is more important than we have heretofore realized.

I operated on a woman who had exophthalmic goitre, with a temperature of 110° , pulse 140. She was unable to sleep or do much of anything save to maintain life. She almost completely recovered; her pulse was reduced to 90° , her temperature became normal, and she is now able to do an ordinary day's work. The study of the anatomy of these nerves is certainly very interesting, particularly to those who expect to do any operating in the cervical region. The physician that cuts into the neck without having made such study of the ganglion, and having seen these nerves, is liable to make woeful mistakes, because he may consider it a trivial operation, but it is not a trivial operation. I do not know of anything so difficult to do as the removal of the cervical sympathetic ganglia.

I had a case about two years ago, that of a boy, suffering from sympathetic ophthalmia as the result of an injured fellow-eye. He was almost blind in the good eye, and removal of the injured eye did not afford the relief expected, although I resorted to atropia to relieve the subnormal tension, but the low tension continued. The eyeball was soft, and felt almost like a bunch of cotton. I gave him a tincture

of belladonna, because it dilates the capillaries. In addition I gave him phosphorus, in the hope that the phosphorus would stimulate and increase the circulation of the brain. In five or six days he began to improve; his condition became normal as to tension, and remained so until about June of the present year, 1902, when it became lowered. I again put him on phosphorus and belladonna, after which he improved rapidly and soon became as well as ever; that is, the tension in the eyeball became normal.

Dr. John R. Wathen: I was fortunate enough to see Dr. Coomes operate in this particular case. About that time I had been looking up the anatomy of the sympathetic nerves, and was impressed with the fact that the authorities all seemed to differ as regards the location, character, and size of the ganglia, and methods by which it should be reached. I found in Deaves's Surgical Anatomy the best description of this nerve. I also noticed the great difficulty of reaching it. No matter what method may be adopted, I think you will find it the hardest part of the human body to reach.

Dr. S. G. Dabney: I am somewhat surprised at the paper, as I thought Dr. Cheatham would certainly touch upon the treatment. That is the practical point I had hoped to learn in regard to this case, as we have a good many cases of the kind, and it is the application of the principles of treatment in which we are interested. I believe the man probably had paralysis of the cervical sympathetic nerve. I have made careful study of the compilations made for over thirty years, and only twenty cases of the kind are written of up to this time; so the affection is quite uncommon, or else overlooked because it does not disturb the sight.

Dr. J. W. Irwin: I was intensely interested in the paper. Ophthalmologists recognized the importance of this great nerve as early as the time of Celsus. He showed that inflammation of this nerve might disturb the whole body; he showed further that irritations about the vulva or rectum disturbed this nerve; he showed further, as other anatomists have done, that this great nerve controls the glands of the body and affects the entire nutrition of the body. What was true then is true to-day. When this nerve is out of order, disorders occur here and there in other parts of the body; therefore it is no wonder if some disturbance of the sympathetic plexus should affect the organs above and possibly the organs below. I think this is one step in advance in Dr. Cheatham's paper. It is not surprising that ophthalmologists should recognize this effect.

Reviews and Bibliography.

The Medical News Visiting List for 1903. Weekly (dated, for 30 patients); monthly, (undated, for 120 patients per month); perpetual (undated, for 30 patients weekly per year); and perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil, and rubber. Seal grain leather, \$1.25. Thumb-letter index, 25 cents extra. Lea Brothers & Co., Publishers, Philadelphia and New York.

A visiting list is an indispensable convenience for the active practitioner. Its carefully adapted blanks enable him at once to note clinical details of every-day work, as well as charges and receipts, and to unburden his memory of that which can better be carried on paper. It also furnishes him with a legal record necessary for the collection of delinquent bills. Probably the best and most convenient of the many publications of this nature is the Medical News Visiting List. The work opens with thirty-two pages of printed data of the most useful sort, including an alphabetical table of diseases with approved remedies, a table of doses, sections on examination of urine, artificial respiration, incompatibles, poisons, and antidotes, a diagnostic table of eruptive fevers, and a full-page plate showing at a glance the incisions for ligation of the various arteries, an invaluable guide in such emergencies.

The Lindsay & Blakiston Visiting List for 1903. The Lindsay & Blakiston's physicians' visiting list for 1903 is before us. This is the fifty-second year of its publication, and is a story in itself sufficient to tell of its worth. This is one of the neatest and most complete of the lists that are sent to the profession. It is large, but not cumbersome, and the contents and other matter in the book are admirably arranged, and we are sure those who purchase it will have no cause for complaint.

The Medical Students' Manual of Chemistry. By R. A. WITTHAUS, A. M., M. D., Professor of Chemistry, Physics, and Toxicology in Cornell University Medical College in New York; City Member of the Chemical Societies of Paris and Berlin; Member of the American Chemical Societies; Fellow of the New York Academy of Medicine, of the American Association for the Advancement of Science, and of the Medical Society of the State of New York. Fifth edition.

This, the fifth edition, has been thoroughly revised in every particular, especially has the section on mineral chemistry been condensed and made more readable in every particular. The section on organic chemistry has been rearranged and in part rewritten and somewhat extended. This, like its predecessors, needs no special commendation from us, as the work speaks for itself. It stands to-day at the head of the list of works on chemistry, and we predict for it a large and rapid sale.

The Medical Record Visiting List for 1903. The Medical Record Visiting List for 1903, issued by William Wood & Company, is one of the neatest and most convenient books of its kind that is offered to the profession. It is handsomely bound in red leather, is moderate in size, and is thoroughly arranged in every particular, making it one among the most desirable of the many visiting lists that are presented to the profession.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Laureate of the Royal Academy of Medicine in Belgium, etc. Assisted by H. R. M. LANDIS, M. D., Assistant Physician to the Out-Patient Department of the Jefferson College Hospital. Volume III. 1902. Diseases of the Thorax and Viscera, including the Heart, Lungs, and Blood-vessels—Dermatology and Syphilis—Diseases of the Nervous System—Obstetrics. 417 pp. Size, $5\frac{3}{4} \times 9\frac{3}{4}$ inches. Philadelphia and New York: Lea Brothers & Co.

This volume of *Progressive Medicine* is devoted to diseases of the thorax and viscera, including the heart, lungs, and blood-vessels—dermatology and syphilis—diseases of the nervous system—obstetrics. The chapter upon the treatment of the respiratory passages is well worthy of consideration, and especially that which refers to exercise and rest. Izal oil is recommended in from two to ten minim doses, with five minims of cod-liver oil, this to be taken after meals for three days, then followed by a day's pause. At no time must more than fifteen minims of izal oil be taken in one day, and in addition to the internal use of the izal oil the patient is directed to sleep with an izal oil lamp burning all night by his bedside. Tunnecliffe states that as compared with the carbonate of guaiacol and the guaiacolate of piperazine, izal oil has the advantage of being cheaper as well as more efficacious. The best results are to be obtained with it in cases of active pulmonary tuberculosis and of old cavities with obstinate fetid expectoration. This chapter of the book is well worth the price of the whole volume.

Genito-Urinary and Venereal Diseases. A Manual for Students and Practitioners. By LOUIS E. SCHMIDT, M. Sc., M. D., Associate Professor of Genito-Urinary Diseases Chicago Polyclinic, etc. Series edited by V. C. PEDERSEN, A. M., M. D., recently Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, Columbia University, etc. Illustrated with twenty-one engravings. Pages iii-249. Philadelphia and New York: Lea Brothers & Co.

This volume, the first of a series of medical epitomes, is well written, thoroughly up-to-date, and will fill a long-felt want for something more than a compend and yet not too voluminous for the busy student. The book-work is also well done, and we consider it quite cheap at the price offered. There is little to criticise except the number and character of the illustrations, which might be a few more and better.

Handbook of Physiology. Revised by WILLIAM H. ROCKWELL, jr., M. D., and CHARLES L. DANA, A. M., M. D., Professor of Diseases of the Nervous System, Cornell University Medical College; New York Physician to Bellevue Hospital; Neurologist to the Montepia Home. Seventeenth American edition, with upwards of five hundred illustrations, including many in colors. New York: William Wood & Co.

This seventeenth revised American edition of Kirk's Handbook of Physiology is before us. No comment of ours could add to the popularity of this well-known work. It is to-day one of the best text-books upon physiology in the English language. The chapter on the nervous system is particularly worthy of mention. Its thorough revision by Prof. Dana brings it fully abreast with the times.

THE ESTABLISHMENT OF A STATE SANATORIUM IN MISSOURI FOR TUBERCULOUS PERSONS.—Preamble and resolutions adopted by the Medical Society of City Hospital Alumni on November 21, 1901:

"Whereas, The provision by State government of sanatoriums for the reception and care of tuberculous persons has become an acknowledged necessity for the better protection of the public against tuberculosis in its various forms; and,

"Whereas, Several States already possess such sanatoriums, while Missouri, although the fifth State in the Union in order of population, has taken no step toward providing for the establishment of such an institution; therefore, be it

Resolved, 1. That the Medical Society of City Hospital Alumni recognize the urgent necessity for an adequate institution designed for the exclusive care and treatment, both hygienic and medical, of tuberculous persons in the State of Missouri, the said institution to be erected and maintained by the State government.

"2. That this Society shall at once, by correspondence and otherwise, seek to enlist the active coöperation of other medical societies and bodies, and of the public press throughout Missouri, to the end that a sanatorium, commensurate with the importance of the object sought, be authorized by legislative action, the same to be erected in some suitable location in the mountainous part of the State.

"3. That copies of these resolutions be transmitted to all other medical societies in the State, to medical colleges, to the medical press, and to local daily press, to the governor and members of the General Assembly; and that a persistent agitation of this subject be maintained in order that public opinion may be so influenced as to secure favorable action by the next legislature toward the more effectual prevention and control by approved methods of one of the most destructive diseases to which mankind is liable."—*The Kansas City Medical Record.*

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AN IDEAL WINTER RESORT FOR CONSUMPTIVES.

That body of land lying east of the Blue Ridge Mountains, and which embraces the top of the mountains for fifty miles either way from Asheville, forms a center of territory which is one of the most healthful in the United States. If we were called upon to locate a national sanitarium for consumptives south of the Ohio River, we would select this territory. The elevation is high enough for all ordinary purposes, and those who can not stand this elevation would be benefited but very little by any climate. The temperature the year around is such as to make it an agreeable place to live the entire twelve months. It is truthfully called the "Land of the Skies," because of its altitude and its many clear, sunny days. It is, and should be, the Mecca of many consumptives in the Missouri and Mississippi valleys, for the reason that the advantages of climate are such as to warrant, beyond all question, special benefits to the consumptive. It is a territory within easy reach of a large area of country from eighteen to thirty-six hours, via the Southern Railway, placing it in communication with the entire South, Middle West, and very much of the Northeast. It is not only a home for consumptives, but for invalids who are suffering from other diseases, and for aged persons, as it enables this class of people to remain outdoors a great deal, to exercise their physical bodies, which is an all-important point.

Asheville, like all other centers of this kind, has a number of excellent physicians who are capable of caring for the ills of the sick; it likewise has its mountebanks, that are to be steered clear of.

Those who wish to send patients to this territory should ascertain the status of the medical profession before placing their clients in their hands. There are a number of smaller places in the immediate vicinity of Asheville, as Hendersonville, Tryon, and the Pines, and the celebrated Hot Springs of North Carolina; it is also a fact that Columbia, S. C., Savannah, Ga., and many of these towns lying between the Blue Ridge and the coast are excellent places for many consumptive people to winter. It is true that at times the weather is a little rigid, but taking it all in all, that entire slope of country, embracing one hundred miles up and down the mountains, taking Asheville as a center, will be found agreeable to many patients.

Current Surgical and Medical Selections.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—The twenty-eighth annual meeting of the Mississippi Valley Medical Association was held in Kansas City, October 15th, 16th, and 17th. The following officers were elected for the ensuing year: President, Edwin Walker, M. D., Evansville, Ind.; First Vice-president, Hugh T. Patrick, M. D., Chicago, Ill.; Second Vice-president, Wm. Britt Burns, M. D., Memphis, Tenn.; Secretary, Henry Enos Tuley, M. D. (re-elected), Louisville, Ky.; Treasurer, Thomas Hunt Stucky, M. D. (re-elected), Louisville, Ky. Next place of meeting, Memphis, Tenn., October 7, 8, and 9, 1903.

THE TRAINED NURSE.—A nurse, like a poet, is born, not made. The greatest care should be exercised, without fear or favor, in accepting candidates for this important course. Simple good health, willing hands, and fair education are not enough to insure the turning out of a good nurse. There is, in the first place, an undefinable something, which we may call sympathetic disposition, which can, under circumstances, make a good nurse of an ignorant person, and the absence of which can not be compensated for by the most thorough instruction in the duties of a nurse. Where we find this quality combined with thorough training we find an ideal nurse. We do not mean a weak, sentimental sympathy, than which nothing can be more detrimental to good work on the part of a nurse, but a quality which expresses itself, not in words, but in the manner of

performing even the least office for the patient—a certain something which enables its possessor to do everything for the patient as if from the promptings of good-will and sympathy, and not from measured, mercenary motives. The sick are generally hypersensitive, and are very ready to feel a perfunctory performance of duty.—*Hahnemannian Monthly*.

A HINT REGARDING TRAINED NURSES.—One of the hardest things for the nurse to learn is not to prescribe for patients. Some pride themselves on carrying out directions to the very letter, but unless the attending physician is also careful to specify what not to do, it is often found that all sorts of liberties have been taken and things performed that were better left undone.

Instruct the nurse never to ask the patient what she or he wants in the way of food. If anything is called for that will not injure, it should be allowed, but even then only a small portion at a time; a little bit in a dainty dish will tempt the appetite, when a larger quantity would induce loathing and nausea.—*Detroit Medical Journal*.

TREATMENT OF PRURITUS VULVÆ.—Siebourg (quoted in the *American Journal of Obstetrics*, October, 1901) has had good results in the treatment of some cases of pruritus vulvæ by subcutaneous local injections of weak solutions of cocaine and carbolic acid. He then attempted to accomplish the same purpose by simple injections of salt solution. He believes that local anesthesia is caused by the pressure of the injected fluid.—*The Therapeutic Gazette*.

TO GUARD AGAINST THE BITE OF THE MOSQUITO.—McIntosh recommends an application for this purpose in the *Medical Record* of November 16, 1901, which he has used for some years when out fishing or hunting in swamps where mosquitoes are prevalent, and in the evenings when sitting out-of-doors, and which he has found to be most excellent and efficient; it is the oil of citronellæ (oil of verbena, Indian melissa oil). It has a very pleasant odor, and is not expensive. The oil should be rubbed into the exposed parts and repeated occasionally, or the following is quite as efficient:

R Oil citronellæ, 5i;
Alcohol, 5i.

Sig.: Apply freely to face, neck, hands, and ankles, to prevent mosquitoes from biting.

This is colored with something to make it slightly green.

ACUTE NEPHRITIS IN CHILDREN.—The treatment consists of rest in bed between blankets, milk diet, water drunk freely, and, at the start, a calomel purge followed by a mild saline, such as liquid citrate of magnesia. The body may be sponged with warm water, or a warm bath given once or twice a day, precautions being taken to avoid chill. A non-irritating diuretic is the citrate or bitartrate of potassium, which may be given in

water with lemon juice and sugar. The severe cases with dropsy, fever, and suppression of urine must be treated actively by dry cups on the lumbar region, by purgation with an active saline (magnesium sulphate), and by free sweating by a hot-air bath or hot pack. A daily irrigation of the colon with normal salt is of value. If uremic symptoms set in, bleeding is the most certain means of relief, two to six ounces of blood being drawn from a child of five years. A full and bounding pulse requires nitroglycerin; threatened convulsions demand bromides and chloral by enema. The patient should be confined to bed as long as there is a trace of albumen in the urine, unless chronic nephritis is seen to have developed. The post-nephritic anemia calls for iron, preferably Basham's mixture.—*Powell, "Diseases of Children."*

HEMORRHAGE IN TYPHOID.—Avoid all movement, writes Mitchell Bruce, even for the use of the bed-pan, collecting the stools in a properly arranged towel. Reduce diet to a minimum, giving, for example, half an ounce of peptonized milk every half hour, or a teaspoonful of meat jelly every hour. Thirst may be relieved by wetting tongue and lips, or with a teaspoonful of quite warm water, plain or acidulated; this is better than ice. A hypodermic of morphine arrests peristalsis and aids in producing sleep and mental rest. An attempt should be made to stop the bleeding by astringents, the most powerful of which is a mixture of lead acetate, morphine acetate, and diluted acetic acid in water, or lead and opium pill, or lead acetate suppositories, or an ice-bag may be applied to the right iliac fossa. Brandy is to be given, with the finger on the pulse, in greatly reduced doses at very short intervals, in milk, so that whilst the heart is never excited by the alcohol, its strength is sustained. The value of hamamelis, ergot, and turpentine is still an unsettled question.—*Treatment in Practical Medicine.*

TANNOFORM FOR SWEATING FEET.—Dr. Grumme, encouraged by numerous favorable reports, has tried tannoform in hyperhidrosis pedis. Being in the military service, he had a rich material to experiment upon. Selecting those men who suffered from particularly severe sweating of the feet, the author treated them with pure tannoform, dusting the powder freely into the stockings, which were put on after washing the feet and worn for twenty-four hours. The effect was unexceptionally excellent, the skin, coming in contact with the powder, assumed a brown discoloration and completely ceased to perspire. After some time the discoloration gradually disappeared, and after from three to four weeks the sweating recommenced, necessitating a new application of tannoform. No untoward results were noticed. If tannoform is employed "diluted" with talc, the action is less marked and less permanent. The use of the drug in the form of ointments and alkaline solutions gave no results beyond more or less extensive blistering of the skin.—*Deut. Militärärztl. Zeit.*

TUBERCULOUS GLANDS.—To avoid unsightly scars, G. B. Massey (Pro. Phila. Co. Med. Soc.) makes a small opening into the gland with a narrow bistoury under ethyl chloride spray, and inserts a sliver of amalgamated zinc to act as the anode of a galvanic current of one to three milliamperes. This is turned on gradually and maintained for a few minutes till the tract is cauterized and sufficiently impregnated with the oxychlorides of zinc and mercury to keep it patulous for a few days. A gold electrode with amalgamated tip insulated up to one fourth inch from the point is then inserted and two to ten milliamperes turned on for ten minutes, and then the wound dressed. Through the sinus thus formed the dead bacilli and deposition chemicals can drain. The treatment is repeated about every three days till the gland has shriveled.—*Medical News.*

SPRAY FOR ASTHMA.—Dr. A. Abrams recommends the following solution as a spray in asthma :

Antipyrine,	15 grn.
Pyridin,	1 dr.
Sod. nitrite,	2 dr.
Tinct. lobelia ethereal,	5 dr.
Tinct. belladonna,	5 dr.
Tinct. stramonium,	5 dr.
Tinct. ipecac,	5 dr.
Glycerin,	to make 4 oz.

—*Medical Fortnightly.*

NEW REMEDY FOR HEMORRHOIDS.—E. V. Hall (Cincinnati Lancet-Clinic) has used successfully a mixture of *echinacea angustifolia* and *hamamelis virginiana* in the treatment of hemorrhoids. In his first case, a lady school-teacher, he directed that two drams of this mixture be injected into the rectum after each operation of the bowels. This treatment was continued until six fluid drams of the mixture had been used, the result being that the patient experienced prompt relief from pain, the hemorrhoids ceased to trouble her, and at the present time she says she is entirely well. Since then he has had equally satisfactory results in the treatment of six other cases. As some patients complained that the medicine was too strong, he modified his formula to read :

R	Fl. ext. <i>echinacea angust.</i>	oz. i ;
	Fl. ext. <i>hamamelis virg.</i> ,	oz. ij ;
	Dist. aq.,	oz. i.
M.	Sig.—Inject two fluid drams after each stool.	

A slight burning sensation is experienced after the use of this mixture, but it soon passes away and the peculiar cooling effect of the *echinacea* is felt by the patient.—*Medical Standard.*

WHEN amputation of the foot is necessary, the practitioner who has but little surgical experience should select the operation above the ankle. It is more easy to perform, and an artificial foot is far more readily adapted than in tarsal and tibio-tarsal amputations. As a matter of fact the tendency of surgeons generally is to regard the operation above the ankle as the most desirable of all.

THE TREATMENT OF CHRONIC BRONCHITIS IN THE ELDERLY AND AGED.—Henry Campbell, in the British Medical Journal, briefly sums up the chief points of a paper by him on this topic :

In treating chronic bronchitis in those past middle life the toxicity of the blood should be kept as low as possible.

The air breathed should be pure, and nasal breathing insisted on.

The diet should be a bare sufficiency, and alcohol indulged in sparingly or not at all.

Every ounce of superfluous fat should be got rid of.

The general health should be maintained at the highest possible level.

A vigorous circulation should be maintained.

Every precaution should be taken against breathlessness.

Breathing exercises should be resorted to in order (among other things) to preserve the mobility of the thorax.—*The Therapeutic Gazette*.

CARBOLIC ACID IN HYDROCELE.—At a recent meeting of the New York Academy of Medicine, Dr. William B. Coley said that he found the injection of minute amounts of carbolic acid to be the best method of treating hydrocele. Each injection consisted of two and a half grains of carbolic acid liquefied by the smallest requisite amount of glycerin. The results were just as good as with injections of larger amounts, while the risk and discomfort were, of course, much less. It is convenient to use a small double trocar. The hydrocele fluid having been thoroughly evacuated through the outer trocar, the carbolic acid is injected through the inner trocar attached to a hypodermic syringe. The hydroceles of infancy nearly all disappear spontaneously or are cured by painting with equal parts of tincture of iodine and tincture of belladonna.

QUINOLINE-BISMUTH RHODANATE IN GONORRHEA.—The crurin of the market, which was originally recommended for ulcers of the leg (ulcus cruris), is said to be a mixture of three parts of quinoline-bismuth rhodanate and one part starch. Dr. E. Jacobi has experimented with the pure chemical as an injection in gonorrhea, and claims to have obtained most gratifying results. He used it in the following formula :

Crurin,	1 gm. (15 grn.)
Rub with aquæ dest., glycerini, aa,	5 gm. (75 min.)
Then add gradually aquæ dest.,	200 gm. (6½ oz.)

TURNING AN HONEST PENNY.—“Ah,” said one little girl to another, “my mamma gives me a penny every morning for taking a spoonful of cod-liver oil.”

“And what do you buy with the penny?” eagerly asked the second girl, in a tone not devoid of envy.

“Oh,” was the reply, “I do not spend it at all; mamma puts it away for me every day to buy more cod-liver oil with!”—*New Idea*.

Special Notices.

MANY of the genito-urinary diseases, which have heretofore depended for a cure upon the different salts of lead, zinc, copper, or silver, now yield permanently and promptly to *Pinus Canadensis*. In all inflammatory processes, in fact, whatever may be the stage of malady, this remedy acts successfully. Through its astringent properties it lessens the caliber of the arterioles, minute vessels and ducts, favorably influencing their secretions, and rapidly bringing about resolution. Even in rheumatism and the various other conditions requiring an external stimulating application, it is a very superior therapeutic agent, and internally it is an efficient remedy in pyrosis, acid stomach, colic, diarrhea, and dysentery.

SANMETTO IN CYSTITIS, GONORRHEA, AND IRRITABLE PROSTATE.—I have been an extensive user of Sanmetto for a number of years, and can truthfully say that when the therapy of the pure santal and saw palmetto is indicated, I find Sanmetto a remedy par excellence. I have used it extensively in cystitis, chronic gonorrhea, and irritable prostate, and it has universally relieved, if not cured, my patients. As long as it maintains its present standard of purity I shall use it, for I deem it pure and ethical.

Chicago, Ill.

W. R. HILLEGAS, M. D.

ITS DISTINCTIVE FEATURE.—One needs but to review the physiologic activities of the remedies recommended as tonics and reconstructives to realize the fact that practically all of them have some secondary effects which detract from their clinical value. It may be that they irritate the stomach and thereby excite repulsion on the part of the patient or even induce nausea and vomiting; some of them are astringent, others primarily stimulating but secondarily depressing—and so on through the entire category of remedies, objections more or less serious may be found. It is, therefore, a matter of great importance to employ a remedy which is not only free from deleterious by- and after-effects, but which adapts itself to use as a routine remedy in the many and diverse conditions that call for tonic and reconstructive medication.

The one remedy which many years of experience proves is entirely free from detrimental effects is Gray's Glycerine Tonic. This preparation is of pleasant taste, agrees perfectly with rebellious and sensitive stomachs, patients never tire of its continued administration, and it is extremely effective in restoring tone and vigor to the entire system.

The entire freedom of Gray's Tonic from anything like drug effects is one of the strongest reasons why the best element of the medical profession have adopted the remedy for routine administration in all conditions associated with impairment of general health, lack of nervous energy, general exhaustion—in anemia, malnutrition, neurasthenia, and in chronic wasting diseases.

THE PURDUE-FREDERICK CO.

15 Murray St., New York.

In the supplement to the *Journal of Tuberculosis* the whole subject of tuberculosis is covered by a series of articles written by Dr. Carl Von Ruck. For controlling the cough of pleurisy, one of the complications of phthisis, the doctor says (January, 1902, page 101): "Cough must be allayed by heroin, codeine or even morphine, the choice being in the order named, but only when required on account of severe pain. I have also employed papife, which has given me very satisfactory results and which possesses the very desirable advantage of not causing constipation."

THE
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"NEC TENUI PENNÂ."

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No. 9.

Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

THE PRESENT STATUS OF BRAIN SURGERY.*

BY H. J. WHITACRE, M. D.

Surgeon to Christ's Hospital, Surgeon to Clinics Medical College of Ohio, and Consulting Surgeon to Speers' Hospital.

[CONCLUDED FROM LAST ISSUE.]

Abscess of the Brain. Trephining for abscess of the brain is by no means a new procedure belonging to the era of modern surgery. Dupuytren opened a brain abscess prior to 1850, but his case died and the operation was unfortunately looked upon with ill-favor for a long time. This fatal result was considered to demonstrate that the brain could not be cut into, and not until surgeons began to observe the frequency of recovery after manifestly severe lacerations of the brain in compound fractures did they learn that the brain could be manipulated with safety.

We are indebted to modern surgery, however, for great advances along three lines which give promise of exceedingly good results for the future in the operative treatment of this most hopeless condition. In the first place, the ardent study of the pathologic processes which cause abscess of the brain have placed the etiology on a scientific basis which brings this condition within the pale of precise surgery. To illustrate: The study of the etiologic relationship of otitis media to abscess of the brain has shown that in from 91 to 98 per cent of the cases of brain abscess from this cause the temporal bone is distinctly diseased opposite the site of the abscess, and that the infection takes

* Read before the Ohio Valley Medical Association, May, 1902.

place through continuity of tissue. It has further shown that when the upper wall of the middle ear is diseased that we find the abscess in the temporal lobe of the cerebrum; that disease of the posterior wall of the petrous portion or the inner wall of the mastoid portion results in abscess of the lateral lobe of the cerebellum; when the sigmoid sulcus is diseased, in the middle lobe of the cerebellum, and when the infection goes through the labyrinth or internal auditory meatus, that the infection occurs in the posterior fossa. In other words, we know from the manner of the primary suppuration in the ear the seat of the dependent abscess in the brain. Similar conclusions have been arrived at concerning the less frequent infections from the ethmoid and frontal sinuses.

It is needless to say that these facts have given us an operative advantage in localization which is invaluable, to say nothing of the cases in which the appropriate to bone lesions of this variety will prevent the formation of abscess.

The second addition to our knowledge regarding the surgical treatment of brain abscess is found in the discovery of the very great frequency with which thrombosis of the lateral sinus, extradural abscess, and lepto-meningitis occur secondary to otitis media. In one hundred and seventy cases of death from middle ear disease brain abscess was found sixty-one times, sinus thrombosis sixty-three times, and meningitis forty-six times. The practical import of these facts is very apparent. Where we formerly thought chiefly or solely of brain abscess when a brain complication arose in connection with middle ear disease, we know that there are three conditions to be differentiated, whose treatment is radically different. An improvement in operative results is certain to follow.

The third element of improvement that we must recognize is that of an improved technique in the exposure of, the search for, and the drainage of the pus.

The greatest number of cases of abscess of the brain will occur secondary to middle ear disease, and will be located either in the temporal lobe of the cerebrum or in the lateral lobes of the cerebellum. The proportion in frequency of abscess in these two sites is about four temporal lobe abscesses to one cerebellar. Abscesses of the frontal lobe from ethmoid or frontal sinus infection are much less frequent, while abscesses secondary to injury may occur in any region immediately beneath the seat of injury.

The trephine opening for a cerebral abscess secondary to middle ear disease is made at a point seven eighths of an inch above the supra-meatal spine. This opening should be immediately enlarged until it forms a parallelogram one and one half to two inches long, and one inch in perpendicular measurement. This opening will expose almost any abscess secondary to middle ear trouble and render the diseased area of bone accessible. The removal of the section of bone may reveal pus at once; if not, place the finger lightly on the dura. An absence of pulsation or a feeble impulse will indicate pus, but it is usually necessary to open the dura and then explore the brain with a large-sized aspirating needle. Fenger has recently devised a needle with a blunt point and a lateral opening which is admirably adapted to the exploration of all except the old encapsulated forms of abscess. The needle should be directed downward, forward, and inward, in the direction of the apex of the petrous portion of the temporal bone. A very thick pus will not flow through other than the largest needles. Failing in the detection of pus by the first puncture, others should be made in somewhat different directions. A failure to detect pus by persistent effort will lead to the conclusion that pus is not present, but in the presence of definite symptoms of abscess the wound should be dressed open, with the hope that an abscess which has been missed may break into the channel of least resistance made by the needle. When an abscess has been located the most accurate provision must be made for dependent drainage, even though this should involve additional removal of bone or a second trephine opening. The anterior surface of the petrous portion of the temporal bone, the roof of the tympanum, and the petrosquamous fissure should be carefully examined for evidence of necrosis.

Cerebellar abscess may be reached by making an opening one inch and a half behind and one fourth inch below the external meatus. The anterior edge of the five-eighths inch trephine should not touch the posterior border of the mastoid process.

While the death-rate from operation has been as high as 40 to 50 per cent in the past, it is my firm belief that this percentage will be very greatly modified in the future, for the reasons that have already been given.

Lateral Sinus Thrombosis. The operative treatment of lateral sinus thrombosis forms one of the most distinctive features in the advancement of cranial surgery. The recognition of the great frequency of this com-

plication of otitis media has been the result of the pathologic researches referred to above, and this in its turn has stimulated a diagnostic acumen which has yielded most excellent results. A trephine opening is now made over this sinus at a point one inch behind and a quarter of an inch above the center of the auditory meatus. If the sinus is thrombosed it may be merely curetted and packed, or the internal jugular vein is exposed low down in the neck, tied, and excised; all clots are removed from the sinus and the cavity drained. Since autopsy and clinical findings have established the fact that thrombosis of the lateral sinus occurs secondary to otitis media, with as great frequency as brain abscess, this lesion will assume a new importance, and it becomes our duty to diagnose carefully between the complicating lesions of this disease, brain abscess, thrombosis, and meningitis. The results of the operative treatment recommended above would seem to be very gratifying, since 50 per cent of such operations have resulted in recovery. The condition is entirely hopeless without operation.

Epilepsy. The surgical treatment of epilepsy is confined entirely to that form known as Jacksonian or traumatic epilepsy, while ordinary or idiopathic epilepsy can in no way be included under the head of surgery, and is never open to surgical treatment.

The Jacksonian or traumatic form of epilepsy is one in which the epileptic seizure begins in such a way that we can definitely determine that the primary irritation has originated in a known circumscribed area of the brain cortex. It is, furthermore, one in which the epileptic attacks can be traced to a recent or remote trauma in the region of irritation. These attacks are to be explained by direct mechanic irritation of the brain-cells in this region. The surgical indications will invariably be for the removal of such mechanic irritant. The irritating body may be a depressed fracture of the skull, a splinter of bone which had been chipped off from the inner table in linear non-depressed fracture, a cyst formed at the seat of injury after the absorption of a blood-clot, or perhaps a cicatrix formed under similar circumstances. Each of these conditions may be remedied by appropriate surgical procedure, and such operations should regularly be performed. It is a fact of some importance, however, that the operative procedure for the relief of these conditions must be applied very soon after the onset of the epileptic attacks, else the results will be bad. A nerve habit seems to be established in the long-standing cases which is permanent, and the complete removal of the exciting cause exercises only a very transitory influence

on the fits. A very guarded prognosis must therefore be given in all such cases.

There is one form of Jacksonian epilepsy in which a careful inspection and palpation reveals nothing abnormal in the area in which the aura originates. In past years such areas were accurately determined by electric stimulation, then excised. This practice has been totally abandoned, since these cases have invariably suffered recurrence.

Microcephalus. The treatment of microcephalus in imbecility by linear craniotomy has not as yet been established on a firm basis. The first assumption that the premature closure of the fontanelles and sutures was the cause of the failure in the brain to develop does not seem to be correct, and the results of the operation are not very satisfactory. The hopelessness of the condition, however, and the undoubted benefits that have followed operation in isolated cases, will certainly cause us to recommend operation where there seems to be distinct reason for so doing.

CINCINNATI, O.

NOTES ON OBSTETRICS BY A COUNTRY DOCTOR.*

BY C. L. VENABLE, M. D.

These brief notes herewith given are only a few among many of a practice covering a period of fourteen years of general practice. Doubtless all of you, or at least some of you, have had the same experience. Your treatment, if like my own, was the best you had at hand, for the country doctor has not the facilities of the town or city physician, and when emergencies come up he must confront the conditions with the remedies he has at hand. These notes will embrace only two cases met in the last year, viz.: puerperal eclampsia and post-partum hemorrhage.

The year of 1901 brought me my first case of eclampsia. I had often seen accounts in medical journals of this condition, and often thought of how to treat a case, and had expected a case for years, but not until November, 1901, was I brought face to face with a genuine case. I was called to see this patient about six o'clock a. m., November 21st. On arrival, the mother said the patient had had a spasm about one hour before my arrival, and that a large tumor was presenting or was present. My

*Read before the Southern Kentucky Medical Association at Adairville, Kentucky, April, 1902.

patient, aged seventeen, primapara, was then resting easy and it did not seem to me that she was in labor. She was large and plethoric, and I saw she was not having convulsions. I began to have hope they were mistaken about her having had one. I called for hot water and soap, and while preparing my hands to make an examination she was seized with one of the most horrible convulsions I ever witnessed. At first her face become flushed and exceedingly red, and as the convulsions progressed her head inclined to the right, her whole body would jerk and contract; it was an awful picture to look upon. As the seizures begun to lessen the skin become dark and livid (cyanotic). It would be ten or fifteen minutes before she would regain consciousness. I then made an examination. There was a large tumor present, and of a kind I had never seen before. I could not tell the nature of it by the touch, so bringing the bed into good light, I found a large mass covering the entire genitalia, and it seemed to be hanging by several pedicles; after a thorough examination I decided it was edema of the clitoris and labia major, as no other tissue around the external genitalia seemed to be involved; pushing aside this mass I made examination to see if her labor was in progress. I found no dilatation or any evidence of approaching labor. I then had a case of convulsions to deal with, some cause other than uterine contractions producing them. She complained of the mass or tumor as being very tender, and said her kidneys had not acted in twelve hours. I then thought I had the cause, viz., kidneys. I drew off about one quart of very foul urine. Yet I believed the edematous mass had something to do with the convulsions, so ordered cold applications. I directed that she take one grain of calomel every hour, also one ounce of sweet spirits nitre in drachm doses every two hours. I brought away a specimen of her urine and found it loaded with urates and albumen. I heard nothing more from this case until eight days had passed, when the convulsions returned at the onset of her labor. She had four convulsions in four hours. I gave her three-drop doses of Norwood's tincture of veratrum viride every hour, and getting no results I brought it up to ten drops every four hours. This did not control them, and having seen the experience of some writer stating that venesection was a good treatment I decided to try it. I took eight or ten ounces of very dark blood from the forearm, and the convulsions ceased. I then gave her one-fourth grain of morphia hypodermatically, and after four hours of good rest her labor resumed and terminated normally in a short time. There were no more symptoms of the spasms,

no untoward after-effects, and a complete recovery. I neglected to state that the edema subsided in twelve or fourteen hours after applying cold as stated above.

I have had a number of post-partum hemorrhages occur in my practice. This is a condition that demands immediate attention, and if not attended to speedily and intelligently a life goes out quickly and surely. There are a number of causes that bring about post-partum hemorrhage. The most prominent, however, is exhaustion, both local and general, the local being seen in the relaxation of the uterus. The general exhaustion which underlies the local is observed in those cases of protracted labor in which the mother fails to expel her child spontaneously. Other causes are retained placenta or partially detached placenta or membranes, and lacerations of the genital tract. Prevention of hemorrhages consists in careful avoidance of exhaustion by careful examination of patient and trying to remove any obstacles that might be in the way of delivery or complicating conditions which may render labor long and difficult. The patient's strength should be preserved by giving liquid food at short intervals and small quantities, stimulate, and give sedatives to obtain sleep. If instrumental delivery is made I do not think the anesthesia should be carried too deep, as it is not required; it should, however, be kept up partially until the delivery of the placenta. In cases of post-partum hemorrhage from adhered placentas, where the adhesions must be broken up, I use much caution in breaking them up. I give one-drachm doses of fluid extract ergot and knead the uterus; strychnia hypodermatically with ergotole or combined. I have never seen any place for the hot douche in these cases, and admitting it may be advantageous I have never been able to use it with satisfaction. Tampons of iodoform gauze is the treatment in most cases, in connection with the above. If the uterine cavity is thoroughly freed of all membranes and clots there is usually no danger of hemorrhages recurring after having been once controlled.

PRICE'S MILL, KY.

FOLLICULAR TONSILLITIS.*

BY M. F. COOMES, A. M., M. D.

Professor of Ophthalmology and Clinical Professor of Otology and Laryngology, Hospital College of Medicine, Louisville, Kentucky.

This may be classified among the acute infectious diseases, for it is well known that the exudate accompanying all cases of this disease contains a specific germ which if implanted upon the mucous membrane of the throat of another person will produce a similar condition of affairs—in other words, will reproduce itself in a manner similar to that of diphtheria. The exact origin of many cases is not known, but it is certainly very clearly proven that it is produced by defective sewerage, and also by cesspools.

It is claimed by very many authors that acute tonsillitis of this form is frequently associated with rheumatism—that there is rheumatic taint about it; in other words, they would have us believe that the same causes which produce this disease produce rheumatism. I do not think there is any relation whatever in the cause of the two diseases. Follicular tonsillitis can in no way be directly connected with rheumatism. It is a fact, however, that persons affected with rheumatism frequently have sore throats, and it is also a fact that with nearly everybody who has rheumatism the muscles of the neck are frequently affected, yet this is overlooked by many practitioners, not recognizing that the muscles of the neck and the intrinsic muscles of the larynx are frequently involved in the rheumatic attack.

I have never in my life prescribed an anti-rheumatic remedy in a case of acute tonsillitis unless there was some evidences of rheumatism present other than sore throat. The treatment of these cases is far more interesting to the practitioner than the fact of their being rheumatic in origin or otherwise. Nearly all of those persons suffering with acute tonsillitis, whether it be of the follicular variety or not, have constipated bowels, and the first and most important thing to be done is to thoroughly evacuate the bowels, preferably with some saline, unless a mercurial is indicated.

If the patient is seen at night it is often better to give calomel, but if seen early in the morning or midday should always give saline, as at this time it will not inconvenience the patient and will give prompt relief. Local applications of heat of one kind or another to the outside of the

*Read before the Southern Kentucky Medical Association at Adairville, Kentucky, April, 1902.

neck in shape of poultices, stupes, etc., may be used at the discretion of the doctor in charge. One remedy that I have found to be most beneficial in all these cases is a solution of Merck's methyl blue, five grains to the ounce of water; with this mop the throat every two hours. In many cases it will not be necessary to mop it more than every five or six hours. If there is a heavy coat or covering on the tonsil it will require much more persistent use of the blue. If the symptoms begin to subside after two or three moppings then the intervals between the applications can be lengthened.

It should be borne in mind that in simple follicular tonsillitis the deposit is very nearly always confined to the tonsils, while in diphtheria the deposit is very likely to invade the palate, uvula, and sides of the pharynx outside the tonsils. In addition to this I use the following :

White extract of *pinus canadensis* one ounce, one ounce of the bromide of potassium, glycerine three ounces, and water three ounces—of this put two teaspoonfuls into one half teacup of water as hot as can be borne by patient, and gargle the throat every hour. If pain at back of neck is severe such remedies as seem to be indicated for that particular symptom may be used.

I am very fond of using codeia and some one of the milder coal-tars, as antikamnia or ammonol. This line of treatment followed out will usually afford prompt relief.

It is not intended to convey the idea that this line of treatment will cure or prevent peritonsillar abscesses, as these are due to another cause, yet they are sometimes associated with follicular tonsillitis.

The three cardinal points in the treatment of these diseases is to evacuate the bowels freely, destroy the germ by a local application, and relieve pain, and if the directions given in this paper are carried out I am sure that there will be no disappointment on either the part of patient or doctor.

LOUISVILLE.

FIVE YEARS' EXPERIENCE WITH ONE REMEDY IN THE TREATMENT OF TYPHOID FEVER.*

BY W. R. PERRY, M. D.

It can be said of typhoid fever perhaps with more truth than any other disease the profession still flounders in a "sea of doubt" as to its treatment. Until quite recently its mortality was fearful, but owing to the bath system of treatment and a strict liquid diet the death-rate has been very much reduced.

The country practitioner, as a rule, has but little time and opportunity for experimental research, but depends on his journal and special hospital reports to keep him up to date on all subjects pertaining to his work. The country doctor's interest centers in the treatment of disease, his prime effort being to give relief and guide his patient to a safe recovery.

While my practice has been limited, yet in the last five years I can say, as to typhoid fever, it has been most satisfactory. Having accepted the "germ theory" as to the causative agent in the disease, naturally I was on the alert for the germicide that would meet the condition and enable me to feel some degree of security. I tried most all the treatments recommended by distinguished and well-known names, but, alas, to me at least they have not proven a "city of refuge." Some six or seven years ago, in reading Tyson's Practice, which I had recently purchased, I noticed in the treatment of typhoid fever a foot-note stating a physician in Hindustan had used the following formula:

R Tr. iodine, ʒiss;
 Acid. carbol, ʒss;
 Chloroformii, ʒij.

Sig. Two to four drops every three or four hours.

stating that he had never lost a case since he had begun its use. This is a broad statement, and while I received it *cum grano salis* I had faith enough to begin its use. In the last five years I suppose I have treated eighteen or twenty cases of the disease, and my friend and colleague as many more; I think he will agree with me that in this time not a case has been lost.

Accepting the germ theory as true, it strikes me that this formula is an ideal remedy, for besides being strongly germicidal and antiseptic it is extremely volatile and should readily saturate the system of the patient.

*Read before the Southern Kentucky Medical Association at Adairville, Ky., April, 1902.

Typhoid fever being seldom epidemic in our section, therefore we meet only with sporadic and endemic cases, which necessarily limits our experience as to number. In the cases I treated with this formula, not one of them reached the low stage with its train of depressing symptoms, and though the fever in some few lasted thirty days it seldom reached higher than 103° . Delirium occurred in but two cases and lasted but a short time, and hemorrhage was extremely rare. If my diagnosis was correct, this shows a remarkable result, and very different from my experience prior to the use of the remedy. I know we have to consider the possibility of an error in diagnosis, and that my cases might have been of a mild type, nevertheless I shall continue its use and do most heartily commend it to the profession for a trial. It is to be deplored that so many physicians have such an enthusiastic opinion of their skill, and faith in the power of drugs, that they fail to consider the compatibility of remedies and the ability of the patient to stand his bold and fierce attacks.

There is no pretense of scientific study or display of text-book lore in this little paper, but a simple statement of my experience in the use of a remedy in a disease that often baffles our most skilled physicians. I hope some of the profession will have enough faith to give it a trial and report results. I will say as to the dose, it may run from one drop for children to four for adults, being governed by the violence of the attack and other indications. I have given it regularly for thirty days and have never found any bad effects.

RUSSELLVILLE, KY.

TYPHOID FEVER IN THE COUNTRY.*

BY B. F. FYKE, M. D.

Typhoid fever in the country has lost none of its terrors; it invades the homes of the rich and poor; the strong man goes down by the side of his weak neighbor. No occupation seems to predispose to or exempt us from an attack of typhoid fever. Typhoid fever occurs in nearly every part of the globe; it has a high rate of mortality. The specific cause of typhoid fever is a micro-organism, the bacillus of Eberth, and is found during life in the stools, urine, and sputa, with but little in the blood. After death it is found in all the tissues and in many of the organs of the body.

* Read before the Southern Kentucky Medical Association at Adairville, Ky., April, 1902.

Bacteriologists differ as to how long the bacillus can live out of the body, and how long it can be found in the body; leaving that part of the subject, we find them agreed that the bacillus can live in water several days and in the soil almost indefinitely, that it is rapidly destroyed by heat and protected for a long time by freezing or cold. But in the practice of medicine in the country we must not be too ready to accept everything taught by bacteriology.

At present no greater problem is presented to the medical profession than the prevention of typhoid fever, and its prevention is a subject of much interest, not only to the physician, but to the people also. Ere long I hope to see every physician paying more attention to the prevention of typhoid fever, as I feel well assured that the profession would be amply rewarded for such attention by additional trophies in the healing art.

This is necessary, and is demanded of us as sanitarians and guardians in pointing out the principles of sanitation and hygiene and the means of prophylaxis which are best calculated to secure protection and immunity from typhoid fever. I do not presume to be able to raise the veil and at once make the subject of prevention clear and plain, but for a few minutes will call your attention to the use of well and spring water and pond ice as three of the most common causes of typhoid fever in the country. That other causes may be found I will not dispute, but I think I can trace the cause of every case of typhoid fever in the country to the use of one of the three agents named.

In cities, sewer gas, the inhalation of dust containing dry sputa from a fever patient, doubtless act as the infecting agents, but we can eliminate these in the country. It is hard to convince the people that the clear and sparkling water from a deep well, or the rippling stream that comes from the foot-hills and mountains, is not pure, or that the ice that is stored away in our ice-houses is dangerous and may be infected with the poison of typhoid fever. How, they will ask, can the water in a well or spring or the ice on our ponds be infected?

Looking over our country, we see graveyards on nearly every farm, in which people that died of typhoid fever are buried; oftentimes these graveyards are on the rising ground from a pond from which our ice-houses are filled each winter, when the ice is sufficiently thick.

Trace the streams of our wells and springs, and we will not go far until we find an opening in the ground communicating with these springs or wells. Looking further on, we see that these holes are the

receptacles or exits of all washings from barnyards, privy vaults, overflows from foul ponds or cesspools. All our swamps have a stratum or strata that is impervious to water; this stratum frequently extends far out from the swamps and acts as a continuous incline for the water coming down to it. There is no reason why this stratum may not pass under soil that has been previously infected in some of the many ways in which infection may take place, thereby conveying the germs of disease to our wells and springs. Seep wells are really more dangerous than wells with strong streams.

I think we can explain the cause of all obscure cases of typhoid fever by studying the water supply of the neighborhood. Given a case of typhoid fever: The nurses are careless with all dejecta, and it is either thrown out upon the ground or buried in an ash-pile to await a heavy rain to be washed into some sink-hole or basin, thence to be carried into our wells and springs. In a few days there is an endemic of typhoid fever in another neighborhood, that has had no communication with this neighborhood. The water explains the cause. It is dangerous for those who are not immune to visit these patients and drink the water they are using.

With your indulgence, I will now give a few of many cases illustrative of this means of causing typhoid fever. In antebellum days Mr. H. had frequent outbreaks of typhoid fever among his negroes, with a high rate of mortality; his own family did not escape until all had been made immune by an attack of fever. A spring at the foot of a high hill furnished the supply of water. In 1891 Mr. H. sold this farm to Mr. B. In four years I treated seven cases of typhoid fever on this farm; he continued to use the spring.

One mile southeast of the spring there is another spring at the foot of a hill, on top of which there was a barnyard in which horses, cows, hogs, chickens, and ducks were fed; the privy vault was near this lot, and the washings from the barnyard and privy vault were carried into the stream from this spring about one hundred feet below its source. On this stream there was a sawmill and brandy distillery, with the accumulations of twenty years' filth; about five hundred feet east of this sawmill there is a hole that acted as a receiver of all overflows in rainy season; any pomace or sawdust thrown into this hole comes out at Mr. H.'s spring. In a field close by the spring Mr. H. buried all those that died on his farm. The spring has been abandoned, with a cessation of typhoid fever on the farm.

Mr. B. lived on an adjoining farm, and used a well for a water supply. The well is forty feet deep, and is on a ridge between a pond on the north and a slough draining a swamp on the south. The pond is in a barnyard that is used for all farm purposes. None of Mr. B.'s family escaped an attack of typhoid fever, and as long as he lived there his family suffered from an invasion of some type of fever every summer. He is now living about six hundred yards from this place, and is using cistern water, with exemption from annual visitations of fever.

Mr. J. used a seep well. In June, 1900, he dug a hole six feet deep; his wife used this hole for a milk-house in hot weather. In July this hole was filled by rain to the depth of eight or ten inches with water; it was still used as a milk-house; several buckets of milk were turned over, and the water was never thrown out. Mr. J. had four cases of typhoid fever in his family. Mrs. J. had a sister living two miles away; after the death of Mr. J. she visited there for the first time, stayed one night and half of a day. In ten days she and her baby had typhoid fever. Mrs. J. had other relatives living farther away who came to nurse in Mr. J.'s family; they had typhoid fever.

Mr. P. lives on a farm with a "bored" well eighty-five feet deep. In 1901 he and three boys cultivated a field that had a spring in it; they drank water from this spring while working in this field. On the higher ground from the spring there is a graveyard. Within four days of each other all three of these boys were sick with typhoid fever. Mr. P. had not worked in this field for ten days before the boys were taken sick. Four weeks after the first cases of fever appeared, Mr. P., his wife, and little girl had an attack of fever. Mrs. P. and her little girl had never used water from the spring, and it had been five weeks since Mr. P. had drunk water from the spring. At this time I was treating two more cases in different families, one of whom used a spring, the other a well. I did not drink water at either one of these places, believing the water they were using to be the cause of the fever, but I would drink water from the well at Mr. P.'s. I had a mild attack of fever, and believe the water in the well became infected.

With one more illustrative case presenting some obscurities I will close: Mr. R. came to Springfield from Tullahoma, and worked as a barber for several months. He was called home to attend the funeral of a member of his family. When he went home he found a brother sick with typhoid fever. There was an endemic of typhoid fever in Tullahoma. After Mr. R. returned to Springfield he was taken sick,

and the attending physician diagnosed a case of tuberculosis. Six of the physicians in Springfield saw him ; two made a diagnosis of typhoid fever ; four, tuberculosis. He returned to Tullahoma and went through a typical case of typhoid fever. When I was asked why I made a diagnosis of typhoid fever I said Tullahoma is in an endemic of typhoid fever, and he has been there with it. Had I not had a history of typhoid fever in his home I should have concurred in the diagnosis of tuberculosis.

The means of prevention of typhoid fever in the country is to convince the people that spring and well water and pond ice are the chief sources of typhoid fever, and that promiscuous visiting among neighbors during the presence of typhoid fever should not be indulged in, and to recommend the use of cistern water exclusively for drinking, and boiled water for cooking purposes, and that all dejecta be disinfected either by heat or lime.

SPRINGFIELD, TENN.

THE TREATMENT OF DIPHTHERIA WITH ANTITOXIN.*

BY W. W. LASLEY, M. D.

In making this report on the treatment of diphtheria with antitoxin, I hope to hear from the doctors of this Association who have had success or failure in its use. I am aware of the fact that the profession is divided on the use of antitoxin for diphtheria. Some of us are too anti to be progressive, and others are too progressive to be safe. The cases that I report to you to-day are not cases of doubt, but cases in which the diagnosis was clear, and of that fearful type that too often leaves the doctor with unpleasant meditations and the home of the patient desolate.

While passing a farm-house November 19, 1900, I was called in to see a little girl three years old, whose mother informed me that the child had been suffering with croup four days, and that the usual domestic remedies commonly employed in such cases had failed to give any relief. I suspected diphtheria, and examination confirmed my suspicion, revealing a severe case. Believing the case too far advanced to yield to the old methods of treatment, I decided to try the antitoxin. I, however, used an antiseptic wash, mopping the throat every two hours. I began

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this treatment at 9 o'clock a. m.; returned at 6 o'clock p. m., and injected 1,500 units of the serum. Continued mopping, and twenty-four hours later found the patient brighter; had taken food and wanted to play out of doors. The membrane had not spread and the laryngeal symptoms gave no indications for the worse. I administered 1,000 units. Did not see patient again, as she died next morning at 6 o'clock.

CASE 2. On October 9, 1900, I was called to see the six-year-old son of Mr. P., who had just been sent home from a neighbor's. I found him very hoarse, throat red but clean. I gave him calomel and Dover's powders, and directed that he use an antiseptic wash and stay indoors for a few days. Two days later I was summoned to attend this boy; found throat covered with membrane, gland of neck swollen, a hoarse cough, and difficult respiration. I remained and worked with patient all day, but nothing gave relief, and he died that night.

CASE 3. Three months later I was called to this same family to attend a little girl five years old, who had been suffering with diphtheria four or five days. The father had mopped the throat regularly from beginning of the attack with a solution of chlorate potash, tincture of muriate of iron, and carbolic acid. I realized that I had a dangerous case of diphtheria to deal with. The surroundings were peculiarly unfavorable. The family consisted of a father, mother, and seven children; two sons grown, the youngest an infant three months old. The dwelling was composed of two small rooms, in which they cooked, ate, and slept. I urged the use of antitoxin, but could not procure consent of the parents, so went to work along the old lines, with little hope of success. Two days later I found that the patient had grown much worse, and two more cases, No. 4, a boy four years old, had it in a mild form; No. 5, a girl two and a half years old, had a severe case. The parents still held out in opposition to antitoxin, and I continued treatment as above. On the night of January 20th the eldest girl died. On the following morning I was requested to come and bring antitoxin. I found on arrival in the same room one little girl dead and three cases of well-defined diphtheria, the mother having also contracted the disease. I gave the girl two and a half years old 1,000 units and the mother 1,500, this being all the serum that I could procure in our town at that time. I, however, ordered some from Owensboro, and in twenty-four hours from time of first dose I found that the membrane had not spread and the constitutional symptoms some better. I gave the mother 1,650 units, the little girl 1,100, and the little babe at the breast 250 units as an immunizing dose. At

my next visit, forty-eight hours later, I found the constitutional symptoms had subsided, membrane gone, throats clean, and the most grateful family you ever saw. The infant escaped the disease, and the little boy, who had it in a light form and to whom I gave no antitoxin, was the last one to recover.

The results in these cases were so positive that no physician could treat diphtheria in this family now without using antitoxin. You will observe that I have described five cases of diphtheria in this family.

The next case I will describe is No. 7. Little Bessie, granddaughter of our esteemed friend and fellow-physician, Dr. L. G. Richardson, was attacked during the latter part of October, 1901. Her symptoms in the beginning were such as to leave us in doubt as to the real character of the trouble. After a lapse of three or four days the disease became well developed, putting the diagnosis beyond any doubt, and proving to be a severe case of laryngeal diphtheria, membrane developing on the tonsils later. This was one of the hardest fights for life that it has ever fallen to my lot to witness. Pale, gasping for breath, rapid pulse, extreme prostration, no rest, no sleep, for the little sufferer. Death stared us in the face. I had related my experience with antitoxin to the doctor, and we agreed that at most it could only hasten the inevitable. We administered 1,000 units at 8 a. m., fearful, however, that we had waited too long. The remainder of the day and most of the night was spent as the preceding day and night had been—hours of restlessness and suffering for the little one and agony for the anxious watchers. But about 4 a. m. the tired lids began to droop, breathing easier, and the heart's action better, and in twenty-four hours after the first administration she slept sweetly. Repeated antitoxin in twenty-four hours; gave 1,000 units. Next day she sat up in bed and wanted to play, and day by day grew better until she was well. Her age was two and a half years.

I wish every physician in the Association could have seen this case. If my own children should take diphtheria I would use the antitoxin. A pure article and early use would better their chances for recovery.

LEWISBURG, KY.

RETENTION OF URINE, WITH REPORT OF CASES.*

BY E. M. FREY, M. D.

Retention or inability to expel the urine is due to two classes of causes; first, those which produce obstruction of the urethra, and second, those which result in a want of expulsive power. Of this class we will have nothing further to say. Of the first class, by far the most common cause is stricture of the urethra. Other causes in this class are enlarged prostate, inflammation or abscess of the prostate, impacted calculus, tumors of the bladder and urethra, pressure of the gravid uterus, and atresia of the urethra or meatus. Our remarks will be confined entirely to two of these causes, that of the prostate and tight organic stricture, as this is in line with the case I shall report.

In almost every case, indeed, I will say in every case of retention from prostatic causes without complications, the retention may be relieved by the correct use of the catheter if sufficient patience, gentleness, and moderate skill be employed. In my own experience of fourteen years I have been able to relieve every case from this cause that has come under my observation.

In speaking of retention from tight organic strictures I have by no means been so fortunate, as I have seen two cases in which it was necessary to relieve the retention temporarily by suprapubic aspiration before I was able to enter the bladder through the urethra. The case which I shall report is one of retention from enlarged and inflamed prostate, complicated by a tight organic stricture, and is as follows:

April 8, 1895, I was called to see D. T., aged forty-two years, in consultation with his family physician. Patient white, unmarried, and family history good. He was suffering from acute retention of urine. His physician stated that he had been called to see him late on the previous evening, and had been with him almost continuously up to the time I was called, at 11 a. m. of April 8th, but had failed to relieve him. His physician stated that the patient had a stricture of several years' standing, that had closed from exposure and neglect to keep it dilated. I found the patient straining and passing only a few drops of urine, while his bladder was greatly distended. He was suffering considerable pain, notwithstanding his physician had kept him well under the influence of morphine. The general condition of the patient was good. On introducing

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my finger into the rectum I found the prostate very much enlarged and sensitive to touch. As his physician had made repeated efforts to pass the catheter without success, I refrained from any further effort in that direction. We repeated the morphine, had a fire made in the room in which he was, had a large quantity of water heated, and when the room was warmed we had the patient put into a large tub and covered with a blanket, and washed his urethra while in the bath. We then placed him in the bed, which had been previously warmed, elevated his hips, filled his urethra with warm olive oil, introduced a small filiform bougie through his stricture—over which I threaded a small silver catheter—through which his retention was gradually relieved. He was now put upon a diuretic and given a saline. The catheter was left in place until the following morning. His family physician was now given entire charge of the case, treated him in the usual manner, and he was soon out again.

He visited me in 1898 and said that his physician had advised him to have his stricture operated on, and asked me for my opinion. As his stricture was in the membranous portion of the urethra, I rather discouraged any surgical measure that looked to the cutting of his stricture, but advised him to take better care of himself and have his stricture dilated occasionally. He visited my office several times after this, but at no time did I pass a sound on him or examine his prostate, as he did not come to me for treatment of either his prostate or stricture.

In February, 1902, he exposed himself and his stricture and bladder began to trouble him. He called in my absence, and I did not see him. He returned to his home and called another physician, who had not seen him professionally or prescribed for him at any previous time. The physician treated him and he was out again in a few days, when he again had a relapse, with complete retention of the urine. That afternoon, March 2d, he called the physician again, who prescribed for him and returned to his office. On the third his physician saw him again; he still had complete retention, and the doctor was unable to relieve him with a catheter. On the fourth he was seen by the doctor and his partner, and they found him dribbling, and with very little pain. He was seen by them again on the fifth. At this visit the family requested that I be allowed to see him, and it was agreed that I should see him on the following morning, March 6th, with the other doctors.

The patient was in the following condition next morning: Pinched face, semi-comatose, answering questions in monosyllables, temperature

subnormal, pulse 130 per minute and feeble, respirations shallow, skin cold, occasional vomiting, bladder enormously distended, reaching two finger-breadths above the umbilicus. The bedding was saturated with bloody urine. I introduced my finger into the rectum and found prostate very much enlarged and sensitive to touch—much larger than at my previous examination in 1895. The patient had been given morphine, sanmetto, lithia tablets, and boracic acid. A number of efforts had been made to pass a soft catheter of large size without success.

The previous experience of the family with me caused them to have a warm room and an abundance of hot water prepared. We removed patient's soiled linen and lifted him into a large tub filled with hot water, and he was given one-twentieth grain of strychnine hypodermatically; his urethra washed out while in the bath. He was allowed to remain in the bath thirty minutes, when he was removed, dried, and placed in a clean, warm bed, his urethra filled with warm oil, and a gentle effort made to pass a filiform bougie without success. The patient was so feeble that anything like a prolonged effort was out of the question. Having no aspirator with me, I introduced a trocar into the bladder just above the pubis and drew off a large quantity of very offensive, bloody urine and pus with small dark clots. The condition of the patient was so unfavorable that I allowed the cannula to remain in place. I attached a rubber tube to the cannula, making continuous drainage from the bladder. He was given five grains of calomel in two doses, urotropine three grains every three hours, with all the water he could be induced to take and retain. For nourishment he was given small quantities of milk and water, equal parts, every three hours, and one pint of normal salt solution was injected into the bowels every six hours to induce his kidneys to resume their function, if they had not been already damaged beyond reparation.

March 7th: Patient brighter; will answer questions more readily. There has been a fair amount of bloody urine and pus drained from his bladder. There was at least some hope that the function of the kidneys would be re-established. Pulse still 128, but a little stronger; bowels moved twice, and there had been no vomiting. The advisability of doing a suprapubic cystotomy to establish better drainage as well as to free the bladder of its contained blood and pus by a thorough washing out with a warm boracic acid solution was considered but not thought advisable, and that by waiting twelve or twenty-four hours the chances for his recovery would be better than if the operation were done at this time.

At 5 p. m. of the same day hiccough set in, and we felt that this was the beginning of the end. The hiccough was controlled by a dose of morphine given by his physicians in my absence, but not before the cannula had become disarranged so that it would not drain the bladder. On the 8th there was very little change in his condition from that of the previous day, and it was determined to open the bladder at once. After the usual preparation the bladder was opened under chloroform, the operation requiring a very short time; bladder contained bloody urine, large blood-clots, and pus, which was washed out with a warm boracic acid solution. A large drainage-tube was inserted into the bladder and a dressing applied. Patient came from under the chloroform quickly but the secretion from the kidneys gradually grew less, and the patient died thirty hours after the bladder had been opened.

I feel that if the bladder had been opened the morning I first saw him, under a local anesthetic, the results might have been different; the patient might have gotten well. However, his condition was so unfavorable that I feared any surgical procedure further than simple drainage of the bladder.

In reviewing the case, I believe now that the advice given him by me in 1898, not to have a cutting operation, was wrong; and while this would have been good advice in the majority of cases, there are cases like this one, where the patients will not have their strictures dilated sufficiently often, and who live some distance from a competent physician, who should have their strictures cut, thereby removing the cause from which this man lost his life.

GUTHRIE, KY.

GALL STONES: REPORT OF A CASE.*

BY W. R. BURR, M. D.

A snap diagnosis of gall-stone colic is often made by the careless physician when called to see a case complaining of pain in the right hypochondriac region, and yet it seems to me that such a conclusion, without well-marked signs and symptoms and the finding of gall stones in the evacuations, is uncertain.

On the other hand, it is empirical to attribute all colicky pains to disturbances of the digestive apparatus and have only one diagnosis for such manifestations. We should not fall into the habit of our osteopathic friends, and have but one cause for all physical pains and aches. No matter what the patient's affection is, they have a stereotyped expression to explain the cause of the trouble, namely, "a constriction of the pyloric end of the stomach."

The great Napoleon thought the stomach "the seat of human welfare," and physicians who are not of an investigating turn of mind are apt to hold the stomach responsible for the major portion of the maladies that derange the human machinery.

Genuine gall-stone colic has every indication of a fatal ailment, and not infrequently one thus affected does succumb to the shock produced by an attack. One meets, now and then, a case in which severe paroxysmal pains lead him to suspect gall-stone colic, but in which the other signs and symptoms are wanting, and the problem that presents itself is a perplexing one.

But to the case which I am to report, which has been a very interesting one to me, as it was misleading, and I only arrived at a diagnosis after careful investigation.

I was called late in the afternoon of September 29, 1901, to see a gentleman sixty years of age, who was reported to be suffering from a violent spell of intestinal colic. The messenger said he had suffered an attack the previous night, and that a physician in a neighboring town had sent him some morphine tablets to quiet him, not being able to make him a visit. This failed to relieve him until he had taken several doses at hourly intervals.

When I arrived at his house I found him suffering excruciating pain and begging for relief, saying that if he did not get relief in a short while

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he believed he would die. He was sitting, bent nearly double, in bed, it being impossible for him to assume the recumbent posture. His face was pallid and anxious in expression; he was in a cold, clammy sweat, and his pulse was going at a rapid rate. The pain, he said, had commenced suddenly in the back, at the lower border of the ribs on the right side, and radiated to the pit of the stomach, at which region there was tenderness but no apparent distention. There was slight tenderness over the gall-bladder, but no enlargement about the liver that I could discover.

His suffering was so acute that I decided to give him relief for the time, if possible, and then give his case further investigation. I gave him a fourth of a grain of morphine and one hundred and fiftieth of a grain of atropia, and had the attendants apply cloths, wrung out in hot water, over the seat of pain. In about fifteen minutes he expressed himself as entirely easy, and wondered why the repeated doses of morphine he had taken for the paroxysm the night before had been so slow in giving him relief.

On further examination of his case I found that although his pulse-rate had been high, and the attack had been preceded by chilliness, his temperature was only half a degree above normal. There had been no pain of any consequence in the right hypochondriac region, but there had been some rigidity of the muscles. There was no evidence of distention from accumulation of gas in the stomach and bowels; his urine was scanty and highly colored, and there was constipation. He said that his evacuations for a week or more had been small, pasty, and light-colored. He was not jaundiced at that time, but was slightly so in about forty-eight hours. A bedside urinalysis was negative in its results, except that I felt sure of the presence of bile in the urine.

The severe and sudden paroxysmal nature of his trouble, unaccompanied by any marked elevation of temperature, and the absence of gaseous distention, caused me to suspect gall-stone colic. But as the signs and symptoms were somewhat misleading, and repeated attacks in his case occurring at short intervals for a number of years had been called colic, resulting from indigestion, by other and more experienced practitioners than myself, I deferred giving a decided opinion.

The patient informed me that about twenty years ago he was troubled with severe and recurring attacks of colic, which the physician who attended him called "bilious colic," and that he gave him olive oil freely, which, after a short time, afforded him relief. He then had no

further trouble for four or five years. During the past fourteen or fifteen years, though, he has been frequently an intense sufferer from these attacks, and says that the physicians who have treated him have pronounced his trouble "indigestion of the worst form." He says that they always gave him morphine to ease him during the attacks of colic, and would then give him tonics and digestive agents.

During the illness in which I attended him he had five paroxysms of colic, at intervals varying from twenty-four to forty-eight hours. The treatment was morphine and atropia for the paroxysms to give relaxation, which never failed to quiet him quickly and give relief until the next passage of stones. A brisk purge of calomel, ipecac, and soda, followed by a full dose of phosphate of soda, was given, and olive oil was given him in large doses every four hours for a number of days. He also got each morning a dose of the phosphate of soda.

Directions were given to save all his evacuations and search them for gall stones by mixing them with warm water and straining through several thicknesses of cheesecloth.

He was confined to bed for about two weeks, and during that time passed twenty-one irregular-shaped gall stones, varying in size from that of an ordinary navy bean to twice that size. Besides these stones, innumerable ones the size of a pin-head were found in the residue after straining the evacuations.

Realizing that when gall stones are present attacks will recur, endangering life until they are all passed or are removed by the surgeon, I felt very much like the case was an operative one when the first stones were found. But in a country practice we can not always treat cases as we should like to treat them, and as an operation was not expedient I decided to do the best I could with medicinal agents, and tide the patient through the stormy passage of the stones already formed and seeking exit, and to prevent others from forming as best I could.

I saw the case the 12th of October of last year, and since that time he has had no symptoms of a return of his trouble, and he is in better health than he has been for years. But he is still under treatment, with a view of keeping his digestion in order and of obtaining a free flow of bile, hoping thereby to prevent the formation of stones.

AUBURN, KY.

PARALYTIC DEMENTIA.*

BY ERNEST RAU, M. D.

There is no form of disease complicated with insanity which is more ominous and presents less hope of recovery than that known as paralytic dementia or general paralysis of the insane. We are now fairly acquainted with its history, symptoms, and invariable termination, but are still ignorant of its remedial therapeutics, and for a long while little was known of its pathology, which still gives rise to much discussion. The names which have been applied to it among American writers are: General paralysis of the insane, progressive general paralysis, general paresis or paralysis, paralysis of the insane, paralytic dementia, paretic dementia. A much used and expressive term is "softening of the brain." Gray defines it as a cerebral disease of chronic remittent type characterized by dementia of very gradual onset usually merging into a mania or melancholia, generally with stupid and expansive delusions and accompanied by tremor, ataxia, pupillary alteration, and eventual paresis. In 1822 Bayle described it, considering it a chronic meningitis. From that time until the early 50's the most attention was given it by French physicians. In 1854 Erlenmeyera German wrote upon it, and since that time it has been considered by writers of every civilized nation, the names of whom are too numerous to think of looking into, much less to mention. Most of the cases received into the hospitals for the treatment of such diseases are in the more advanced stages and prove rapidly fatal.

It would be useful for every general practitioner to acquaint himself with the signs by which the disease may be recognized in its early stages. That this knowledge is needed, is shown by Dr. A. E. McDonald, former superintendent of the New York City Asylum for the Insane, who said that an examination of the certificates sent to the asylum by physicians in private practice shows that they recognized the true character of the disease in but three cases out of thirty-five in which they had made affidavits. Physicians connected with public institutions made a somewhat better showing, detecting the form of insanity in thirteen out of thirty-five.

Most of the American alienists have conveniently divided general paresis into three stages: First, prodromal; second, maniacal or melan-

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cholic, and third, dementia. This prodromal or initial stage is of extreme importance and interest. It is the stage in which if there is a chance for recovery that it should be recognized. It is the stage in which at times the symptoms are so gradual and insidious that it is almost next to impossible to satisfy yourself as to whether the patient be insane or not. It is the arena of many a fiercely fought medico-legal battle. The moral traits of the individual are more prominently affected first. The individual whose character was formerly irreproachable becomes profane and abusive, associates with the lower classes, appropriates property of others, borrows money when not able to pay it back, gives checks on banks when he has nothing on deposit, or he may become extravagant, giving things of value to persons that are utter strangers to him; buying articles he has no need of, regardless of price.

The careful business man may become careless, paying no attention to his business. Memory is always bad, especially concerning recent events. In this state the patient may be reproached by his friends and relatives for obliquity of morals instead of mental unsoundness. The individual in this initial stage may talk intelligently and even shrewdly. There are cases every year that defeat the attempts of their relatives to restrain them in the asylum. The physical signs are very soon apparent, the most marked being a tremor in speech, associated with a slight twitching of the facial muscles, especially about the corner of the mouth. The peculiar slurring of pronunciation of certain syllables or consonants, especially the labials, is one of the pathognomonic symptoms of paresis. Such words as artillery, cavalry brigade, or truly rural will bring out the speech defect. Tremor of the fingers and of the hand in writing, myosis or loss of pupillary reflexes, or there may be irregular exaggeration of the wrist, elbow, and knee jerk (rarely diminution). All these are among the earliest somatic characteristics.

A curious feature is that paretics never recognize insanity in others, no matter how unusual their conduct may be. Later these symptoms become more and more pronounced, until diagnosis is inevitable. The mental symptoms are particularly variable. These may at first be but a melancholia or hypochondriacal condition. This is more common as an early symptom than that feeling of well-being and personal importance which almost always makes its appearance at some epoch in the disease. Sometimes maniacal outbursts

occur; convulsions, epileptiform or apoplectiform, generally usher in the later stages, but they make their appearance very early and very unexpectedly.

There are a certain or rather a limited number of these cases which will progress to a fatal termination without manifesting sufficient symptoms to necessitate their removal from home, but the vast majority require the supervision and care of the infirmary ward of an institution. In the second stage the patient has added to an exaggeration of the former symptoms mentioned a melancholia or a mania, each with certain peculiarities distinguishing it from ordinary melancholias and manias. In the melancholia of general paresis there is not that persistent insomnia or post-cervical headache that is characteristic of ordinary melancholia, but the delusions and hallucinations are depressed ones in character, and suicide may be apprehended.

In the mania of general paresis there is invariably a tinge of stupidity about their delusions and hallucinations. The former are statements without effort at argument. With this stupidity is mingled an expansion and exaggeration of ideas giving rise to the term *grandiosa delusions*. The patient may state that he is President of the United States, or that he owns the world, or as one stated when he was awakened at "Beechhurst" to get ready for breakfast, that he owned the Galt House and had been to breakfast. If you tell him you know how much he is worth, and that he does not own or is not what he professes to be, he has no argument to make, but simply restates his former assertion. In this respect he affords a marked contrast to the paranoiac, who may have the same delusions of grandeur, but will have any number of plausible and settled reasons to lend flavor to his assertions. In the active delusional stage they are sometimes violent and dangerous to others or themselves. They act from sudden impulses and will fight any number, perfectly regardless of consequences.

The mania usually becomes violent, and in some few cases the patient dies from exhaustion. The third stage, dementia, is marked by extreme imbecility and childishness, and yet the patient is very stubborn and hard to manage. His habits become extremely unclean, his speech almost unintelligible, mental and nervous reactions are very sluggish—sometimes absent altogether. Anesthesia is often remarkable; patients sometimes show no signs of pain even after burns or painful injuries. There is a blank expression of countenance, difficulty in swallowing, imperfect mastication, bolting their food. They are

generally unable to feed themselves in this stage. They fatten, however, and will eat whatever and all that is given them. They sleep a great deal. Bed-sores are apt to form from defective innervation. Repeated convulsions or lighter congestive attacks are common, sometimes with little motor effect, but generally with the deepening or extension of the palsied condition of the patient. Under all these conditions he is game to the end. He is happy and contented and wants nothing.

There are two factors that seem to especially predispose to this disease—syphilis and alcoholic excesses. Sexual excesses have been written of considerably as a cause, especially if indulged in at or after middle life. Some writers claim that syphilis alone is the real cause. Mental shocks and strains of all kinds predispose to it—indeed, whatever tends to bring about prolonged brain irritation or exhaustion; the sudden loss or sudden acquirement of financial prosperity; speculators are frequent victims; rarely inherited. Careful analysis of statistics show that about four males are affected to one female; some writers state that the Hebrew race shows an exemption next to the negro. I understand that prior to the Civil War it was unheard-of for the negro to have the disease. It is very common among them to-day; you can go into any of the public asylums and see a great many typical cases among the negroes. I recall a case of a negro who had passed through the initial stage with delusions of grandeur, saying that he had three hundred acres in orange groves all covered in with glass; another that he was private secretary to President McKinley, and smoked gold cigars, etc.

I was told that there were a great many cases in the institution as well marked as these. In Cuba it occurs much oftener among the negroes than the native whites. I have also seen a great many typical cases among the Hebrew race, and think, in these cases, that the worry over business, both mental and physical strain, is a causative agent. The ages at which most are affected is between thirty-five and fifty, but cases have been reported as early as six and as late as seventy.

It occurs very often among military men, especially officers, also with conductors and engineers. While syphilis causes true paresis, it also causes a disease called by some pseudo-paresis, the symptoms of which resemble paresis, differing pathologically and curable in considerable proportion of cases by antisyphilitic remedies. It is next to impossible to diagnose pseudo-paresis from the true form, and it

becomes the duty of practitioners to make trial of the antisyphilitic treatment in every case in which there is the smallest reason for suspecting that the subject has ever had syphilis.

At a session of the New York Academy of Medicine, March 16, 1901, Dr. C. K. Mills, of Philadelphia, read a paper in which he said that syphilitic pseudo-paresis was of good or bad prognosis according to the stage of the disease when the treatment was begun. The discussion of the pathology of paralytic dementia in a brief paper, when so little of a distinctive character has been settled upon, would be profitless.

In fact, much difference of opinion exists among brain pathologists who have conducted the most careful investigation as to the exact nature of the changes observed and the order of their appearance. By some it is considered that the primary change begins in the blood-vessels; by others that some alteration in the nuclei of the cells is first to be seen, while a recent and painstaking investigator asserts that all the structures making up the molecular layer of the cortical area are alike involved. The question as to whether the disease is primarily a true interstitial encephalitis remains unsolved. Whatever the initial change may be, or wherever it may begin, no tissue of the infected area is exempt—cells, fibers, neuroglia all undergo a degenerative alteration.

The blood-vessels and lymphatic spaces are affected and the membranes covering the brain are often thickened and adherent. The cerebral hemispheres are soft and the continuity easily destroyed; the part showing the greatest change are the ascending frontal and parietal convolutions, the third frontal convolution and the island of Reil. Next in order come the remaining frontal and parietal convolutions, the occipital being the last involved.

The prognosis is very unfavorable, and I believe hopeless. Remissions at times with considerable improvement lasting from a few months to one, two, or more years may be anticipated in a small number of cases, but have no influence on the unfavorable prognosis. They rarely live over five years, and I believe the majority die in three. However, there are cases that live for years. Dr. Clouston records a case of well-defined general paresis that lived twenty-five years. There is a case at the Western Kentucky Asylum which, if still alive, is of twelve years' duration; she had been there ten years, two years ago; these cases are rare.

If the cause can be ascertained, every effort should be made to remove it; this should be persistent and begun as early as possible, as it is only in the early stages that treatment promises any hope of recovery. Antisyphilitic treatment should always be tried unless positive assurance can be had to the contrary. Give nerve and general tonics. Where there is a tendency to convulsions or apoplectic seizures, the bromides, in doses of ten to fifteen grains, are useful. Hyoscine, $\frac{1}{100}$ gr. hypodermatically, or given in combination with some of the bromides by the mouth, are of service in the maniacal outbursts; hot baths are often quieting. The bowels should be well open. During the third stage, careful nursing, every means being used to prevent or cure bed-sores; in fact, make the patient as comfortable as possible.

LOUISVILLE.

THE MOST PRACTICABLE ORGANIZATION FOR THE MEDICAL
DEPARTMENT OF THE UNITED STATES ARMY
IN ACTIVE SERVICE.*

BY THOMAS PAGE GRANT, M. D.

Late Captain and Assistant Surgeon, K. S. G., of Louisville, Ky.

INTRODUCTION.

Of necessity the sick and wounded of an army must, in some degree, be an impediment to its movements. The medical and hospital corps being non-combatants (and at no very remote day held by some commanders to be a hindrance, but from a broader and more enlightened point of view no part of an army is less so), it would not be too much to say that there is no part of an army so indispensable as the medical department, and none that will repay so well the care and attention given its training as will the hospital corps.

The care for and disposal of the sick and wounded of an army is one of the most important duties that will confront a commander, for, while men will go into the jaws of death under the leadership of a commander that they feel will care for them when they are wounded, nothing will disorganize and discourage a body of troops quicker than to feel that their commander does not feel an interest in them.

*Submitted to the Association of Military Surgeons of the United States in competition for the Eno Sanders Prize, 1902.

The consideration of what should be the proper organization of the medical department of our army is one of the most important as well as patriotic subjects that can engage the thought of the military surgeon.

This is the day of the specialist in every walk of life, and especially is this true of the medical profession, and while medical officers of the regular service should, of all our guild, endeavor to become general specialists, if that expression may be allowed, they should strive to perfect themselves in all branches of the profession. Still it is but natural that some particular line of study and investigation will appeal more strongly to each of us than will another, hence we can but become more adept in those lines. And it certainly will always be that in any war calling for a considerable increase of our army there will be a demand for the services of medical men who are in the national guard, or in civil life, and they will bring into the service with them, to a greater or less degree, the specialty that has engaged them in their every-day work. And this is well; hence the surgeon-general and chief surgeons of corps and divisions should make an especial effort to become acquainted with the lines of work of every medical officer under them, and to place each where he will be able to do the best work.

To illustrate: A man who in civil life is a railroad surgeon, being used to sudden emergency work of a serious character, other things being equal, would make a better man to command an ambulance corps than would a man who had been doing eye and ear work, and the skill of the eye-and-ear man would be of great advantage at a base or general hospital.

Realizing that it is impossible, in times of peace, to even approximate the size of our army in the next war, when it shall come, the writer will only suggest that there should be a surgeon-general, a medical inspector-general, and a suitable number of surgeon-colonels (assistant surgeon-generals), medical inspectors, surgeon lieutenant-colonels, surgeon-majors, surgeon-captains, surgeon-lieutenants, and contract surgeons, together with such other necessary officers and men of the medical department as may be needed to meet the demands of the army on the basis herein set forth, using an army corps and a division as the units of organization, and multiplying the medical personnel of an army corps by the number of corps in the army of the future.

PERSONNEL OF THE MEDICAL DEPARTMENT OF THE UNITED STATES
ARMY, WITH THEIR RANK AND DUTIES.

One surgeon-general, with the rank, pay, etc., of a major-general, who, under the Secretary of War, shall be charged with the administrative duties of the medical department of the army, which shall include all matters pertaining to the medical, surgical, and sanitary administration of the army. He shall, either in person or by a representative, be a member of all boards to consider any matter affecting the health of the troops.

One medical inspector-general, having the rank and pay of a brigadier-general, who shall, under the surgeon-general, have supervision of all that relates to the sanitary condition of the army and shall make inspections of the work done by the medical officers and hospital corps; he shall also inspect the hospitals, posts, camps, stores, and transports used by the army, and make such reports and recommendations as in his judgment shall be for the good of the service.

The surgeon-colonels, or assistant surgeon-generals, shall have the rank, pay, etc., of colonels of cavalry. They will act as chiefs of the several sections of the surgeon-general's office, as chief surgeons of armies or army corps or divisions, or such other duties as may be assigned to them by proper authority.

The medical inspectors shall have the rank, pay, etc., of lieutenant-colonels of cavalry, and shall be in line for promotion to the higher grades of the department. They shall make medical and sanitary inspections (as suggested under the head of medical inspector-general) from general, corps, or division headquarters. They may be assigned to be chief surgeons of armies, of corps, or of divisions, or as chiefs of hospitals, either as administrative officer (director or superintendent) or on the visiting or operating staff, or may be assigned to any other duty required for the good of the service.

Medical inspectors should be medical men of the highest attainments as physicians and surgeons, who have given the subject of hygiene the most careful study, and who have more than a passing knowledge of the many trades, arts, and sciences that enter into our every-day life. They should have a knowledge of topographical and civil engineering, of plumbing and drainage, of heating and ventilation, of the selection and preparation of foods, as well as medicine and surgery.

They should be endowed with quick, comprehensive, and correct powers of observation and reasoning, that they may take in and comprehend the full value of all surroundings with which they may be brought in contact, that they may be able to judge at a glance the sanitary conditions of the environments of the troops wherever they may be—on the march, in camp or field, in hospital or barracks, on transports or trains—and if he sees aught that would imperil the life, health, or usefulness of the troops, be able to point it out and show how it can be corrected at the least delay and cost.

They should be men of more than ordinary executive ability, having the courage to kindly but firmly point out defects and insist on their immediate correction. Being assigned to the duty of inspection, they will of necessity become adepts in that function, and therefore better qualified to aid the medical staff in their labors than is the surgeon whose mind, from the nature of the case, is occupied with clinical and administrative matters.

The surgeon lieutenant-colonels shall have the rank, pay, etc., of lieutenant-colonels of cavalry. They may be assigned to act as chief surgeons of corps or divisions, or to duty in hospitals or on transports, or any other duty that the good of the service may demand.

The surgeon-majors, having the rank and pay, etc., of majors of cavalry, they may be assigned as brigade medical officers (when serving as such they shall be known as brigade surgeon-majors), or to regiments as surgeons, or to command ambulance corps (or companies), or to hospitals, or transports, or such other duties as the good of the service shall demand.

The surgeon-captains and surgeon-lieutenants (or assistant surgeons having the rank of first lieutenant, mounted, for the first three years of their service, and of captain, mounted, after that) may be assigned to duty with regiments, batteries, ambulance corps, posts, or hospitals, or to such other duty as the good of the service may demand. As far as possible, all commissioned medical officers shall go through the army medical school.

It will be noted that no mention has been made in detail of the duties of the surgeons. The reason for this seeming omission is that their duties are so well understood that it is useless to go over them, and the writer feels that he is risking nothing in venturing the opinion that in the future, as in the past, the medical officers of the army will be found abreast with the best thought of the day.

When the necessity of the service shall demand it, there may be employed so many contract or acting assistant surgeons as may be needed. They shall receive the same obedience and respect as commissioned medical officers.

All the foregoing shall be educated and qualified doctors of medicine.

Also a suitable number of dental surgeons may be employed under contract, if in the judgment of the surgeon-general there shall be a demand for the services of such.

Any commissioned medical officer may be detailed as acting medical inspector, or as a member of any board or court.

In addition to the medical department as now constituted, there shall be added a sub-staff corps, to be known as the hospital staff corps of the army. It shall consist of a suitable number of commissioned officers, non-commissioned officers, and privates, and shall be somewhat analogous to the quartermasters and commissary corps for the army at large, while the commissioned officers of the hospital staff corps will at times be expected to perform a line of work parallel to that of a battalion adjutant.

The hospital staff corps is to be at all times subordinate to the medical officer in charge of any detail to which any portion of it may be assigned, regardless of the relative rank of the commissioned officers in charge. The commissioned officers of the hospital staff corps shall be as follows: Captains of the hospital staff corps, having the rank, pay, etc., of mounted captains (or perhaps they might be known as chief pharmacists); also first lieutenants of the hospital staff corps, having the rank, pay, etc., of first lieutenants, mounted (perhaps they might be known as pharmacists of the first class); also second lieutenants of the hospital staff corps, having the rank, pay, etc., of a second lieutenant, mounted (perhaps they might be known as pharmacists of the second class). They should be men of good character, having marked executive ability, qualified to command and instruct men in the drill and duties of the hospital corps, and should have a knowledge of the principles of first aid. They should have a practical knowledge of pharmacy, and have the capacity to make such purchases as may be needed by the department, and also have a good knowledge of accounts, as well as the duties of a quartermaster and commissary. Preferably, they should be appointed from the ranks of the hospital stewards who have shown an aptitude for such appointment, which should only be made after a careful examination as to the fitness and capacity of the applicant, and should cover both general and technical education.

They may be detailed as medical storekeepers, medical purveyors, or as pharmacists, quartermasters, commissaries, or accountants for the medical department at general or other headquarters, hospitals, or on hospital ships or trains, or to have tactical charge of an ambulance corps or company, or such other duty as the good of the service may demand.

The advantages of having commissioned officers of the hospital staff corps trained to discharge a line of duty as has been indicated above, which is non-medical, and to which, under the present system, a medical officer is generally assigned, are manifold and obvious. To use the words of a distinguished member of the Association, "certain of the work of the direct management and instruction of the field sanitary personnel is taken off the already over-weighted shoulders of the medical department, and the duties of the latter are more closely confined to strictly professional work. The advantages of such an arrangement, under existing conditions, are certainly many, the chief of which are that the medical officers are comparatively few and correspondingly precious, and therefore should be permitted to devote themselves to work that requires special aptitude, training, and experience." (Lt.-Col. Hoff, Proc. Assn. Mil. Surg., 1896.)

The duties suggested above are many, varied, and flexible, but all are but the perfection of those that are now required of the hospital stewards, and by giving these officers a commission it holds before the hospital stewards a motive for better service, and to the young pharmacist in civil life a prospect of something better than a mere living if he will enlist, and will result in a better class of men applying for places in the hospital corps. As indicated, they will take the clerical and other duties, which in the past have been discharged by medical officers, and leave them to attend to duties of a professional (medical) character.

To again use the words of a member of this Association, "it is illogical to perfect a tool for a special purpose and then divert it to another and remote use for which it was not intended, but it were better to fit a man for such duties."

By having such officers in the medical department as a part of it, they become trained in their duties and take a pride in doing them well, thereby increasing the efficiency as well as the *esprit de corps*; whereas a line officer, temporarily holding such assignment (and most likely he would be a man whom the immediate commander wanted to

dispose of), would have to be instructed, and that at a time when the services of every medical officer would be needed elsewhere.

Being a member of the medical department, they would be, in the writer's opinion, protected by the Geneva Convention, while a line officer acting as quartermaster, etc., would not; and then, too, he is directly responsible to the medical department and not to another corps.

A necessary and invaluable adjunct to the successful operation of the medical department of the army is a well-trained and disciplined hospital corps, made up of a suitable number of non-commissioned officers of various grades, and intelligent privates thoroughly instructed in their duties. Perhaps it might have done in times past to depend on the services of men from the line to assist in the work of the hospitals, but that is passed, and to-day, with modern guns and aseptic surgery, demands that the hospital men shall be trained and well equipped for their work. Therefore the hospital corps should be made up of the very best men in the whole army, and not, as has been the custom in some armies and ages, of the men who were the least account and never-do-wells, who were simply kept in the service because their company commanders were too indifferent to see that they were discharged, and had them assigned to the hospital to get rid of them.

No man should be enlisted in the hospital corps who does not have at least a good common-school education and who can not write a fair, clear hand, and who has not a good disposition. A hospital corps man will find abundant opportunity to exercise all his patience and ingenuity. While he should be amiable, he should also be firm and resolute in doing his duty. Any man found to be irritable or petulant should be transferred to the line or put on clerical duty, and not allowed in the wards or operating-rooms, nor sent to the firing-line with the ambulance company. While the sick or wounded soldier need not be treated as a spoiled baby, he is still a human being and entitled to humane treatment by medical officers and hospital attendants, treatment which I can not say is always accorded him.

No man who is given to the use of intoxicating drinks should be retained in the hospital corps or hospital staff corps, and especially must no driver of an ambulance be allowed to go on duty when he is drinking. If any driver on the march be found to be drinking he should be taken off his ambulance (or wagon) and turned over to the provost guard and severely dealt with.

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ANNUAL REPORT OF THE HEALTH BOARD OF LOUISVILLE FOR 1902.

The annual report of the Health Board of Louisville, through its chief officer, Dr. M. K. Allen, contains some very important suggestions—chief of which is to appoint medical inspectors for the various schools in the city. It is a notorious fact that the greatest mortality of the human race occurs in children, and is usually due to preventable diseases, such as diphtheria, scarlet fever, etc. It is within our knowledge that diphtheritic patients have been permitted to attend school in this city time and again, actually going through the entire course of the disease until paralysis following it had occurred, before the diagnosis had been made. With such a case as this, it is easy to understand how a whole school is liable to be infected with this fatal disease. What is true of this disease is true of many others. The expense would be small, and the saving of life and other expenses could hardly be calculated.

The report is a most excellent one and deals with many urgent needs that are demanded by a city like this; but it seems that our city fathers are dreaming, and we will have to wait until they are done napping before these important defects are remedied.

Another important suggestion by Dr. Allen is the erection of public urinals in the center of the city; nothing is so necessary as this, or more urgently needed, and it is to be hoped that this matter will receive prompt attention.

WE take pleasure in calling the attention of our readers to the excellent paper on reorganization of the regular army by Dr. Thomas Page Grant, of this city. It is a paper that was submitted for the Eno Sanders Prize for the best essay on the subject of reorganization of the army. The committee wrote Dr. Grant a letter, in which it was stated that if there had been any second prize it would have been given to Dr. Grant. The army is badly in need of doctors, and those younger members of the profession who have aspirations in that direction would do well to read this paper of Dr. Grant's, as it is full of suggestions that are valuable. When it is remembered that the committee that passed upon these papers was one of the most rigid in this or any other country, a man should feel proud of being second in a great contest like this, where there are so many contending.

Current Surgical and Medical Selections.

HOW DIPHTHERIA IS SPREAD.—From time to time there are reported incidents which display the profound ignorance of many of the poorer classes with regard to the spread of infectious diseases. In the case of diphtheria it oftens happens, in the heart of London, as elsewhere throughout the United Kingdom, that numbers of children visit the body of a playmate who has died of that terribly infectious disease. Again and again official investigation has shown that social gatherings in infected houses have been one of the active causes in fomenting an outbreak. Sometimes a prayer-meeting is held in the house of the bereaved friends, but we are glad to learn that the custom is being abandoned among the miners of Dowlais, under the advice of Dr. Thomas, the Merthyr medical officer of health. That gentleman states, however, that the practice of viewing the body of the infectious dead is still very common. In some instances he had heard of the children of neighbors actually being allowed to kiss the dead body. Comment on such a state of affairs is needless. How are the poor to be educated on such matters, which are of vital importance to their own welfare? A general knowledge of the laws of health and of diseases, with special attention to infection, should form part of the education of every school child. At any rate, it can not be too widely known that it is unwise to kiss any one who is suffering with or has lately recovered from a sore throat of any kind whatever.—*Medical Press and Circular.*

AN antiseptic added to oil does not usually render the latter valuable as a disinfecting agent. It is only of real service in preventing the oil itself from becoming rancid, as the effect of the oil prevents the antiseptic from having much action upon the tissues.

IN cases of osteomyelitis severe pain and evidence of inflammation occurring in other bones point to extension of the disease to other foci, and necessitate prompt operation as for the original condition. Those cases that have been mistaken for rheumatism and in which the original operation has been long delayed are the ones most apt to result in the development of multiple osteomyelitic abscesses.

METHYLENE BLUE IN ULCERATIVE TONSILLITIS.—Vincent's angina is a severe form of tonsillitis, characterized by fetid ulceration, high fever, and painful swelling of the lymphatic glands. At a recent meeting of the Société des Hôpitaux, Prof. Chauffard reported such a case, which was completely cured by three applications of the pure medicinal methylene blue. As the ulceration resembles a chancre, this treatment is also useful in establishing a differential diagnosis.—*Medical Record*.

PYOKTANIN.—Dr. Lustwerk has obtained good effects from the employment of pyoktanin in the dropsy of cardiac and nephritic origin. The patients were given one and a half grains of the drug in capsules, thrice daily, three hours after meals, to avoid digestive disturbances. In nine cases out of eleven constituting the author's series, marked improvement resulted; the remaining two could not tolerate the drug, and were not benefited by other cardiac remedies.—*Rusky Vrach*.

TANNIN AND BROMIN IN TREATMENT OF PRURITUS.—Joseph, in Med. Stand., states that an ointment containing bromin and tannin is of great service in the treatment of all forms of pruritus. The bromin, according to his statement, is used for its anesthetic properties and the tannin for its astringent effects. He prescribes an ointment composed of bromin twenty and tannin forty per cent. He states that the action of this ointment is increased by the alkaline secretion of the skin, without producing any irritation. He uses as a base a ten to thirty per cent jelly.—*Journal American Medical Association*.

Special Notices.

"PARALDEHYD" possesses many of the good without the evil qualities of chloral. Used in insomnia resulting from various causes. The objectionable taste of the chemical is, to a great extent, disguised in Robinson's Elixir Paraldehyd (see third cover page), which is an elegant preparation.

GASTRALGIA—ITS TREATMENT.—Gastralgia is, for therapeutical purposes, divided into two groups by Professor Saundby (*N. Y. Medical Journal*). The first group comprises those cases in which pain occurs independently of eating, and the second group, those cases in which the pain occurs after food is taken. The treatment of the first class consists of change of scene, a sea voyage or mountain air and abundant food at regular intervals. The palliative treatment consists of iron, quinine, arsenic, nux vomica, and the mineral acids.

For the second class, the treatment is rest in bed, milk, and lime water in sufficient quantities—say an ounce every hour. A nutrient enema of one egg, beaten up in four ounces of milk, to be given every four hours. The amount of milk should be increased with improvement, and if milk fails, from two to four ounces of lightly-cooked minced meat may be substituted.

For the relief of the pain in both cases, Saundby gives morphia or heroin, but in a recent clinical report Professor Boone, College of Physicians and Surgeons, St. Louis, states that he finds one antikamnia and heroin tablet (five grains antikamnia; one twelfth grain heroin hydrochloride) given as required, not only relieves the pain, but prevents its recurrence, much more satisfactorily than either heroin or morphine alone. In other respects he concurs with Professor Saundby in his method of treatment.

I AM thoroughly satisfied with the results I obtain from the use of Peacock's Bromides. I prescribe it with much confidence, and while I have seen others, said to be "just as good," I do not tolerate them, but consider this a splendid recommendation for the preparation.

H. A. SCHRAEDER, M. D.

Braymor, Mo.

I REGARD Seng as one of the best, if not the best remedy, that I have ever had experience with in all dyspeptic and gastric troubles. I have been practicing thirty-five years, and thus you will see this is saying much for a remedy. Its action is slow, but I deem this all the better.

D. W. TICE, M. D.

Troy, Mo.

DYSENTERY AND FLATULENCE.—The griping pain and flatulence which accompany bowel and stomach complaints, particularly during the heated term, are so readily overcome and controlled by the timely administration of one or two antikamnia and salol tablets, repeated every two or three hours, that it behooves us to call our readers' attention to the grand efficacy of this well-known remedy in these conditions. The above doses are, of course, those for adults. Children should be given one fourth tablet for each five years of their age. When the attack is very severe, or when the disturbance is evidenced at or near the time of the menstrual period, we find it preferable to give two antikamnia and codeine tablets alternately with the antikamnia and salol tablets. The latter tablets promptly arrest excessive fermentation and have a pronounced sedative effect on the mucous membranes of the bowels and stomach, and will check the various diarrheas without any untoward effect.

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

ON THE PREVENTION OF INFECTIOUS DISEASES.

BY E. J. KEMPF, M. D.

The new theory of the causes of diseases based on the result of microscopical study of germs—the germ theory—stands in the closest possible relation with the doctrine of spontaneous generation, fermentation, miasm, and contagion. The germ theory of disease had its advocates two and a half centuries ago, which goes to show that the growth of science is slow and that many workers take part in the gradual evolution of what perhaps a few get credit for by their skill in summing up the knowledge gathered by their predecessors.

Though the germ theory may be considered to be a very old one, the first observer who really saw micro-organisms was Anthony Van Leeuwenhoek, of Delft, who described rods, threads, and spirals, and their motion. The study of these organisms or objects was for many years mainly speculative; afterward the study of the morphology of micro-organisms was pursued with great energy, and Christian Gottfried Ehrenberg published a systematic account of bacteria in 1838. His observations were made with the improved microscope of the times, and constituted a new era in the history of microscopy. Ehrenberg called these minute organisms "animalcula."

In 1835 Bassi discovered the cause of silkworm disease, thereby giving special impulse to the theory of parasitism, and this was quickly followed by evidence of the existence of both vegetable and animal exciters of disease. Schoelein demonstrated the fungus of favus in

1839; Vogel discovered the *oidium albicans* in 1840; Goodsir found the *sarcina ventriculi* in 1841; but the greatest influence upon the development of the parasitic theory was the sequel to the discovery of the anthrax bacillus by Davaine in 1850. Chevreul next showed that animal solids remained free from decomposition when protected from the access of germs. In 1857 Pasteur demonstrated that fermentation and putrefaction were caused, not by chemical forms, 'as Liebig had taught, but simply by the agency of lower organisms, which he divided into aerobes and anaerobes.

To Pasteur should be given the credit for furnishing the first reliable data from which the modern science of bacteriology has been evolved. Pasteur, a Frenchman, was born in 1822. His discovery of bacteria as the cause of anthrax (splenic fever) in cattle was an epoch in the science of the disease, and the forerunner of more discoveries to follow. Among the remarkable results of Louis Pasteur's researches is his method of preventing hydrophobia by inoculation, thereby making the patient immune to the disease.

It is supposed that bacteria pervade the world, and are to be found in all three kingdoms, animal, vegetable, and mineral, and wherever the conditions are favorable they develop and multiply. They are breathed into the human body with air, or are swallowed with every mouthful of food that is taken. If they meet with the proper conditions for their growth and reproduction they may do vast harm, as they multiply so fast that one healthy typhoid fever bacillus under proper conditions will have increased to sixteen millions before the end of the first twenty-four hours. Once in the circulation they may be carried to every part of the body and injure its organs. However, it may also be taken for granted that the schizomyces play an important role in the economy of nature, and that they may be necessary for the life of plants and animals, for without their agency the higher plants, incapable of feeding upon the complex molecules of dead animals and plants, would die if dead bodies did not undergo a putrefactive change or disintegration through the instrumentality of micro-organisms. This reminds us of an old saying, "Without death there can be no life."

It was about the year 1865 that Lister began to appreciate the bearing of bacteriology upon surgery, and commenced his studies upon the antiseptic treatment of wounds. This gave a powerful stimulus to the study of the relation of micro-organisms to disease.

Koch, the great German bacteriologist, first substituted solid media for the bouillon of Pasteur as soil for the growth of the organisms, and made the separation of bacteria possible for their identification. His discovery, made in 1882, that bacillus tuberculosis was the cause of the phenomena of the tubercular disease, fairly revolutionized our ideas concerning that terrible destroyer of the human race.

The study of bacteriology may in the future produce the proper means for preventing disease or curing it by germ destruction or by inoculation. Thus in 1894 was discovered the antitoxin cure for diphtheria by Behring and others.

Panum and Brieger have made deep studies of the so-called poisons supposed to be products of bacteria, namely, ptomaines and toxins. It is supposed by them that ptomaines are products of bacterial growth and that toxins are poisonous ptomaines; leucomaines are thought to be animal alkaloids, the result of tissue metabolism.

The specific organisms differ in their morphologic and biologic characters to such an extent that they can be recognized and isolated. All of these pathogenic organisms are transmissible from one individual to another if not already immune. One attack of certain of these specific diseases confers immunity against subsequent infection from the same species of organism. In some instances this immunity is permanent, lasting throughout life, while in other diseases it is of short duration, lasting only a few weeks or months. Many bacteria which are pathogenic for man, and the specific organisms of many diseases, have been discovered, but in many other diseases no specific organisms have as yet been isolated, though from their clinical manifestations and contagious character they are believed to be due to some specific agent.

Those diseases which are infectious may be disseminated in several different ways. The confusion which is more or less prevalent with regard to the exact term to employ in each disease, whether infectious or contagious, has led some authorities to substitute the term transmissible, and Dr. Abbott calls those diseases which were formerly designated as contagious, transmissible by direct contact, and those diseases which were formerly designated as infectious, transmissible by indirect contact. To the former belong such diseases as diphtheria and smallpox, and to the latter such diseases as typhoid fever and influenza. By direct contact is meant not only the contact of a body suffering from a contagious disease with a healthy human being, but also the dissemination of disease through the medium of clothing or food infected with the specific micro-

organisms, or through the agency of flies or other insects whose bodies have become infected by coming in contact with infective materials. Indirect contact may be explained in a similar way.

There are some diseases in which the infective agent passes on its cycles through the body of an insect and is disseminated by means of the bite of an infected insect. Malarial and yellow fevers are diseases so transmitted.

A disease is said to be epidemic when the infection has been imported into a locality, or has broken out in a locality in some unaccountable way, and there exist as many as ten cases after all sanitary precautions have been exercised. A disease is said to be endemic when the infection has been developed within a locality, or is peculiar to a locality, and spreads over an area. A disease is said to be pandemic when it spreads over very large areas or prevails in several continents at the same time. The term pandemic diseases is usually applied to cholera, yellow fever, influenza, and the plague. The different pandemic diseases have local habitats from which they are rarely absent. The habitat of influenza is in Russia, that of cholera in the valley of the Ganges River, that of the plague in Indo-China, and that of yellow fever in Cuba.

The reason why everybody exposed to a contagious disease does not contract the disease is due to immunity to the disease which may exist in the human body, either in a natural or in an acquired form. Immunity may be described as that condition of the body in which the organism resists the invasion of disease-producing bacteria, or resists their growth and activity after they have gained an entrance, while susceptibility is the opposite condition, in which, instead of resistance, there is a passive inertia, which allows the disease-producing bacteria to develop. Immunity is either natural or acquired.

Natural immunity is the inherent, vital, reactive state of a healthy organism against the invasion of foreign agents. This natural immunity may be to a certain degree a racial condition; for instance, the negro is less liable to yellow fever, but more liable to tuberculosis, than his white brother. It is also to some extent a family condition transmitted from generation to generation. Again, it may be to some extent a condition of the individual. Immunity against disease may be considered to a certain extent a condition of the medical profession, for some as yet unexplained reason, except it be an unconscious carefulness against unnecessary exposure while handling the sick.

Acquired immunity may be divided into four classes : (1) That induced by recovery from a previous attack of a disease, as is the case with some of the common diseases of childhood, such as measles, scarlet fever, and chicken-pox; (2) that induced by an attack of an allied disease, as in the immunity conferred by vaccinia against variola; (3) that induced by an injection of antitoxic substances, as in diphtheria and in hydrophobia; (4) that induced by the injection of toxins, as in the protection against typhoid fever and plague by means of filtered bouillon culture of the specific organisms of these diseases. Some people are also more susceptible to some diseases than others, and are oftentimes more susceptible to all diseases than other persons. Persons afflicted with chronic eczema are supposed to be immune against small-pox, and erysipelas is thought to be a remedy against malignant tumors.

Each disease which the physician in active practice has to contend with has a history of its own, not only as to its course and management, but also as to its prevention. But the procedures used for the prevention of the different diseases are frequently the same, and will be given in this essay but once. Preventive medicine deals with all diseases, but there are many diseases with which sanitary science has more to do than with others, and these are called infectious or contagious diseases. These diseases are generally under the immediate control of the boards of health.

Erysipelas is an acute contagious disease characterized by a special inflammation of the skin caused by the streptococcus pathogenes longus. It is a widespread disease, endemic in most communities, and at certain seasons epidemic. It is both contagious and inoculable; but except under special conditions the poison is not very virulent and does not seem to act at any great distance. It can be carried by a third person, and the poison can attach itself to the furniture, bedding, and walls of the room in which the patients have been confined. Recently delivered women and persons who have been the subjects of operations or of accidental wounds are particularly prone to it. Therefore, every physician, surgeon, midwife, and nurse should be careful not to carry this disease to such people who are through circumstance more susceptible to the disease. Isolation and disinfection are the two modes of prophylaxis against the disease. It is the disease of erysipelas more than any other which makes it imperative for the accoucheur to attend his midwifery cases as carefully as the surgeon does his surgical cases at the present day. Never should the accoucheur see a case of erysipelas and attend a case of midwifery within the same twenty-four hours.

The ideal physician—and by the term physician I mean the physician, surgeon, and obstetrician, as preventive medicine recognizes no specialities—should be the personification, not of style, fashion, nor buncombe, but of personal cleanliness. His hands should know how to handle soap, his hair should be cut close, his face should be shaven clean, his clothes should be clean in appearance and in reality, his body should be in love with the bath-tub, his interior should be moral, intellectual, and educated, and his behavior should be that of a gentleman. Such a physician is the bridegroom of preventive medicine.

Glanders is a contagious and infectious disease, fatal in nearly every instance, and is one of the most dreaded among the long list of maladies communicable from animals to man. It is of equine origin, and is caused by the presence in the system of a bacillus, the "*malleomyces equestris*." Glanders may present itself in two forms—acute and chronic. Acute glanders can easily be recognized by the veterinarian on account of its variety of specific symptoms; but when we are called upon to pass an opinion on a case of chronic equina it becomes a most difficult matter. Mallein, a product of the growth of the bacilli, is now used for the purpose of diagnosing glanders in animals.

Any animal known to suffer from this dread disease should be killed and its carcass should be cremated, and any person suffering from glanders, either acute or chronic, should be isolated and quarantined, and the attendant should be very careful against unnecessary exposure.

Whilst fevers of all kinds were described by Hippocrates, Galen, and others, the modern discussion of typhoid fever dates from 1813 to 1850. In 1829 Louis' great work appeared, in which the name "typhoid" was given to the fever. Dr. Gerhard, of Philadelphia, was the first to describe the difference between typhoid fever and typhus, in the *American Journal of the Medical Sciences*, in 1837. Since the germ theory of disease has been established, the researches of Eberth, Koch, Gaffky, and others have shown that there is a special micro-organism constantly associated with typhoid fever. During the last few years Chiari, Kraus, Hodenpyl, and others have proven by their labors that typhoid fever is no more primarily an intestinal disease than is smallpox primarily a cutaneous disease. Typhoid fever in its relation to preventive medicine must be considered a specific disease with a specific cause, which must be managed in a specific way.

The infectious material of typhoid fever is contained in the urine, feces, and vomit. All these excreta must be disinfected by means of

equal quantities of chloride of lime solution or other reliable chemical disinfectant. Special care is necessary in the handling of the patient's hands and person. All soiled clothing and bedding must be removed and disinfected. The nurse's hands should be disinfected after each handling of the typhoid fever patient. All the water used for drinking purposes should be boiled whenever it is believed to be the source of the infection. This applies to the water used by the household or community not only for domestic consumption but also for public bathing. It is well known that boiling does not purify the water, but it is taken for a fact that boiling kills the typhoid fever germ, and until this supposition is proven to be fallacious it would be little less than criminal not to boil suspected water during a typhoid fever epidemic.

It should ever be kept in mind that each individual case of typhoid fever is a focus for the spread of the disease. To carry out effective measures of prophylaxis is quite as much a part of the physician's duty as the cure of the patient. The following procedures, suggested by Gilman Thompson, should be carried out in hospital practice, and with modification in private houses:

1. The best disinfectants of typhoid fever urine and stools for practical use are (i) a 1-500 acidulated solution of corrosive sublimate; (ii) a 1-10 crude carbolic acid solution; (iii) chlorinated lime.

2. Owing to the possibility of injury to the plumbing, the carbolic acid solution is preferable wherever plumbing is concerned. The lime is best suited for use in privies and trenches as we find them in the country.

3. The disinfectant should be thoroughly mixed with the stool and left in contact with it for two hours. Enough of the disinfectant must be added to completely cover the stool with the solutions.

4. The bed-pan should be kept filled at all times with at least a pint of the disinfectant, in order that the stool may be discharged directly into it, and after emptying the vessel the same should be cleaned with scalding water and one of the disinfecting solutions.

5. Rectal thermometers, syringes, tubes, and all utensils coming in contact with any of the fecal matter must be disinfected with the corrosive sublimate or carbolic acid solution.

6. After each stool the patient's perineum and adjacent parts should be washed and sponged with a 1-2000 corrosive sublimate solution.

7. Nurses and attendants should be cautioned to wash their own hands thoroughly and immerse them in a 1-1000 corrosive sublimate solution after handling the bed-pan, thermometer, syringe, or patient.

8. All linen and bedclothing used by the patient should be soaked in a 1-20 carbolic acid solution, and subsequently boiled for fully two hours.

9. Disinfection of the stools should be begun as soon as the diagnosis of typhoid fever is made, and should be continued for ten days after the temperature of the patient has remained at the normal.

10. In localities where a proper drainage system is lacking, the stool should be mixed with sawdust and cremated or buried in a trench four feet deep, after being covered with chloride of lime.

Dysentery signifies an intestinal flux, characterized by frequent stools, and in the acute stage by tormina and tenesmus. Anatomically there is an inflammation and usually an ulceration of the large bowel. Dysentery is one of the four great epidemics of the world. It is one of the best known of the diseases of the ancient world, and an accurate description of the disease is given by Hippocrates. In 1506, the first records of post-mortem examinations of dysenteric subjects were published, so that Sennertus (1626) was well acquainted with the morbid anatomy of the disease, and knew that it consists of an ulceration of the lower bowel. Dysentery is ubiquitous, occurring sporadically and epidemically, and is especially fatal in the tropics.

Klein (report of the Medical Officer of the Local Government Board for 1895-'96 and 1897-'98) believes the bacillus enteritidis sporogenes to be the etiologic factor in many cases of diarrhea, and that it probably gains entrance to drinking water through sewage and surface-washings containing the fecal matter of domestic animals. The bacillus dysenteriae described by Shiga, Flexner, and others is now generally regarded as the cause of acute dysentery, and this organism is also carried in infected waters. Besides these, certain putrefactive organisms, such as those of the proteus and lactic acid groups, are also believed to be concerned in the causation of diarrhea and dysentery under certain conditions.

As to the prophylactic measures against dysentery, I refer to the article on typhoid fever and on cholera Asiatica, etc.

Cholera has been epidemic in India from remote times, but only within the present century has it made inroads into Europe and America. In 1832 an epidemic was brought over in emigrant ships from Great Britain to Quebec, and in the same year it traveled to the United States. In 1854 it prevailed widely throughout the country. Of late years it has not been seen in the interior of the United States, thanks to the

efficient quarantine maintained by the authorities against this disease. In 1884 Koch announced the discovery of the specific organism of the disease. *Comma bacillus* is the germ which is supposed to be the cause of the disease, as it is constantly found in true cholera. It is really a spirochæte. The question of the spreading of cholera by water is, in many respects, as well established as the spreading of typhoid fever by the same agent.

Preventive measures are all-important. Isolation of the sick, disinfection of the patient and his surroundings, and efficient quarantine have effectually prevented the disease from entering England or the United States since 1873. On several occasions since that date cholera has been brought to various ports in America, but has been checked by quarantine. During epidemics the greatest care should be exercised in the disinfection of the stools and clothing of the patients; persons should be warned not to drink water unless previously boiled, even if it has been filtered, and errors in diet should also be avoided. As the disease is not more contagious than typhoid fever, the chance of a person passing safely through an epidemic depends very much upon how far he is able to carry out thorough prophylactic measures. Digestive disturbances are to be treated promptly, and particularly the diarrhea, which should be checked as soon as possible by means of the proper drugs.

Quarantine is our main reliance to limit the spreading of an epidemic of cholera Asiatica and to prevent the entrance of the disease into a country from a foreign land. In the local management of an epidemic of the disease isolation of the patient and quarantining of the house are measures absolutely necessary in order to prevent the spreading of the disease from house to house.

For the local management of cholera Asiatica or dysentery, preventive medicine suggests the following measures :

1. The attending physician, or the head of the family in which a case of cholera or other infectious disease occurs, should notify the health officer in writing of the occurrence of the disease, giving date, name of the patient and of the family, name of the disease, address of the family, number of cases of the disease occurring in the family, and, if possible, the source of the infection.

2. The health officer should have the house placarded with yellow, red, or green cardboard, on which is printed the name of the disease and a warning to "stay out." The house should not only be quarantined, but also be guarded by the police.

3. No person shall be permitted either to enter into or to go from a house infected with a disease dangerous to the public health without a permit from the board of health.

4. The excreta, including the vomit and feces of a cholera patient, should be disinfected at once with carbolic acid solution 1-50, or with a solution of chloride of lime.

5. Disinfection of the privies, vaults, and water-closets should be systematically carried out by the health officers and his assistants.

6. All premises, streets, and alleys, whether infected or not, should be thoroughly cleaned and disinfected.

7. The clothing of a patient afflicted with any of the intestinal diseases should be soaked in a solution of carbolic acid before such clothing is put in the wash. In the same manner should be treated all bedclothes used by the patients.

8. Disinfection of the house in which such intestinal diseases have occurred should be carried out in a systematic manner by the health board appointees.

9. It should be made the duty of every person in charge of the body of any one who has died of cholera to cause the body of any such person to be interred within twelve hours after death. The body must be placed in a coffin securely closed and never again opened. The funeral should be strictly private. Cremation of the person dying of any contagious disease would be the simplest solution of the difficulty, but on account of the prejudice against cremation by many people this will probably never become either a law or a custom.

10. During the prevalence of an epidemic of any of the contagious or infectious diseases the poor of a city or town or village should be looked after, their domiciles systematically cleaned and disinfected, and their food supply inspected.

Bubonic plague was probably not known to the ancients, as the first description of this disease was given during the second century. Just now the disease is receiving renewed attention on account of its appearance in San Francisco, Manila, and other cities. Quarantine is no doubt the most effective measure against bubonic plague. Rats are carriers of the disease, and their destruction by means of poison, sulphur, principal gas, and in other ways has been undertaken in the cities where the plague has appeared, to diminish the danger of infection. The vigorous warfare waged against these pests, as well as against flies, mosquitoes, etc., is a good measure for the prevention of many dis-

eases, but sight should not be lost of the fact that the removal of the nuisances on which these scavengers feed is of just as great importance. The fact has been established that many bacteria are necessary to the welfare of man, because they carry out nature's laws in purifying the water and in making sewage harmless to man. Likewise it must not be forgotten that not so very long ago flies and rats were considered nature's scavengers.

Leprosy appears to have prevailed in Egypt even so far back as three or four thousand years before Christ. The Hebrew writers often refer to it, but it is evident from the description in Leviticus that many different forms of skin diseases were embraced under the term leprosy. Both in India and China the affection was known many centuries before the Christian era. The old Greek and Roman physicians were perfectly familiar with it. Throughout the Middle Ages leprosy prevailed more extensively than at present. In the United States the disease is confined to Louisiana, California, and the Swedish colony in Minnesota. Its specific germ is as yet undiscovered, and its treatment is as yet as hopeless as it was centuries ago.

Preventive medicine, however, can do much toward preventing the spread of this dire disease by means of isolation of the cases afflicted with the disease in a colony set apart for cases of leprosy, and of quarantine against the colony. This colony, if possible, should be placed on an island and be under a separate form of government.

Dengue is an acute infectious disease known as breakbone fever. It was first recognized in Cairo and in Java in 1779 by Brylon. Benjamin Rush described the epidemic of dengue occurring in Philadelphia in 1780. An epidemic of the disease occurred at Galveston in 1897. Isolation and quarantine are necessary in handling this disease with a view of limiting its career.

Cerebro-spinal meningitis is a specific infectious disease, occurring sporadically and epidemically. Its cause is supposed to be diplococcus intracellularis, a germ discovered by different observers. The disease is characterized by inflammation of the meninges of the brain and spinal cord and a clinical course of great irregularity. It was first described by Vieusseux in 1805, a small epidemic coming under his observation in Geneva. Since then the disease has attracted a great deal of attention, and has been studied and described by Stille, Hirsch, and others. Isolation, quarantine, and disinfection may do some good in limiting the spread of the disease.

Pneumonia is an acute infectious disease characterized by inflammation of the lungs, toxemia, and a fever which ends in a crisis. It is also called fibrinous or croupous pneumonia, or pneumonitis. The cause of the disease is supposed to be the micrococcus lanceolatus of Fraenkel. Pneumonia is the most widespread and fatal of all the acute diseases. "More deaths are attributed to it than to any single form of disease except consumption." (Census Report.)

Whilst pneumonia was described as a distinct disease by the ancients, and the clinical features as well as the physical signs of the disease were well understood by Laennec, yet it may be said that pneumonia, as it is now understood, is a distinct modern disease. Isolation of the cases should be practiced and the sputum should be destroyed.

Influenza is a pandemic disease, and was first described in the sixteenth century. The last pandemic of this interesting disease occurred in 1889-1890, followed by endemics during the succeeding years. In 1892 Pfeiffer discovered the specific germ as a non-motile organism. Isolation will do some good in the checking of epidemics, and so will disinfection of the patient's clothing, bedding, and surroundings, and the destruction of the sputum.

[TO BE CONTINUED.]

A PLEA FOR MORE CAREFUL STUDY OF DIAGNOSIS.*

BY B. F. FRAZIER, M. D.

It seems that physicians have more perplexing questions to settle than any other class of men. It is every day that we have to deal with subjects and objects that put the gray matter to work at its fullest capacity. While we have a great deal of physical work to do, our mental work is never finished until we shake off this "mortal coil" and the soul takes its flight to that country "from whose bourn no traveler returns." We believe in a universal brotherhood of the medical profession; we believe that the profession should be cemented so closely together that no petty jealousies, piques, or quarrels should ever exist. I know of no one thing upon which doctors differ more frequently than the subject of diagnosis, and this one reason should prompt us to a more careful study of this important subject. I believe that a greater number of doctors will acknowledge their

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ignorance (or at least show their ignorance) on this special subject than any other branch of our study.

It is our object in this short paper to point out the necessity of understanding diagnosis and outline, if possible, the best means of procuring a fair knowledge of this important subject.

Why should we make a diagnosis when called to see a patient? Firstly, because it is to the best interest of the patient for us to know precisely the nature of the disease; secondly, our reputations as physicians are at stake from the time we enter the sick man's chamber till his illness terminates. Many of us, while in the hurry and bustle of our busy lives, forget our libraries and our instruments of precision. At times we also forget responsibilities. Some of us cultivate a thirst for the "filthy lucre," some of us a thirst for something else that is well known in Kentucky, which destroys our ability to study; and, consequently, we get into ruts and run along the same old line until we forget that there is anything for us to learn. Our science is making such rapid strides that it taxes our mental capacity to its uttermost to keep abreast with the progress of our profession.

We should first have a thorough knowledge of anatomy and physiology before we are capable of studying diagnosis, for upon these two the structure of medical science is builded, and the more thorough our knowledge of the substructure the more stable will be the structure; and at this good age of the world, when we all have the opportunity of entering the dissecting-room and carving the cadaver and thoroughly familiarizing ourselves with the intricacies of the human body, there is no excuse for us if we have not at least a correct general idea of the relation of one organ to the other, and the effects of disease upon the different organs of the anatomy. When we are called to attend a patient we should feel under obligations to make a thorough investigation of the case. It matters not how insignificant the illness may seem, we should begin at once a careful examination and conduct it in a systematic way, for it is often as essential to the welfare of the patient to be able to tell him he is not a sick man as it is to know the precise nature of the disease if he is ill, for often the imaginary disease is of as serious a nature as the real disease.

We should carefully go into detail as to the family history. We should learn as near as possible the prevailing causes of the deaths of parents, uncles, and aunts, brothers and sisters; consider whether or not the reputed diseases are hereditary in their nature. Then we should go

into a careful study of the personal history; we should learn the age, sex, race, nationality, and occupation, and if its character predisposes to certain diseases; location of residence is important, also climate, and is the patient acclimated? We should also minutely inquire into his habits and mode of living and note possible effects; also note all previous illnesses or injuries and their effects; now inquire carefully regarding the possible cause of the present illness, note manner of onset and first symptoms noticed, the subsequent symptoms in their order and the symptoms present. Note the general appearance of the patient, and be careful to elicit a true history. Estimate the height and weight, and get a true picture of the physiognomy of your patient. Determine the diathesis and note the presence or absence of cachexia. If pain is present, make allowance for susceptibility, and does its location and character aid us in making a diagnosis? Note location and significance of tenderness on pressure; note the temperament of your patient—if there be hypersensitiveness or hypertention; note the condition of the intellect—is there mental dullness, loss of memory, delusions, or delirium? Does the patient sleep well? If convulsions have occurred, to what may they be attributed? Note the appearance of the cutaneous surface, its temperature, is it moist or dry, is there rash or eruption? Closely observe all the qualities of the pulse and condition of the arteries. Is the respiration normal, or is there anything characteristic about the breathing? Take the temperature—is fever present?—if so, note its height, the hour of the day it is highest, the manner of its invasion, its course and duration—has it been preceded by a chill?—if it is subnormal, what may be the cause? How is the patient's appetite? What is the character of food he desires? is he thirsty? does he vomit, and if so, note its character. How are the bowels—is constipation or diarrhea present? what is the character of the stools? do the kidneys act sufficiently, how often, is the urine highly colored or pale? Look at the tongue—if it is coated, what is the character of the coat, what is the color, shape, and general appearance of this organ? Does the patient cough? if so, note its character and consider its cause; is there expectoration? if so, what is the character of the sputum? After making this preliminary examination, we are then prepared to begin a physical examination, and if we have observed closely the foregoing investigation, we have a fair idea of what special organ to begin with.

Is there dyspnea, edema, or cyanosis? is there restless sleep, chronic cough, hemorrhoids, or obesity? If these or any of them are

present, examine carefully the heart, for there you are most likely to find the primary cause. Inspect and palpate the chest, observe distended veins, pulsating jugulars, epigastric pulsation, and pulsating liver; note the position and character of the apex beat and outline carefully the area of cardiac dullness; note the character of all heart sounds, and determine whether or not they can be heard promiscuously over the thorax.

If we have cough of any character, hemoptysis, pain in side of chest, dyspnea, excessive perspiration, especially at night, and rapid loss of flesh, we should then examine the lungs. Inspect the chest, measure it (bilaterally if not symmetrical), count the respirations, observe their type; determine whether expansion and retraction is normal; do you obtain fremitus? percuss the lungs—front, sides, and back; is the note normal? Auscultate the lungs; determine the character of the breath sounds; are there adventitious sounds?

If pain or distress is present in the belly at any point, examine carefully all the abdominal viscera; inspect the lips, gums, teeth, and tongue. Pain of the hepatic type over the right hypochondrium, jaundice, dark urine, or clay-colored stools demand an examination of the liver, and this important organ should be examined with great care. The spleen should also have careful attention if emphysema, left pleural effusion, left pneumothorax, ascites, or tympanitis be present, also in all acute infectious diseases.

If there is pain in the posterior lumbar region of the renal type, anasarca, painful or frequent urination, turbid urine, increase or diminution in amount (irregular chills and fever), a careful examination of the kidneys should be made, and there is no organ of our anatomy that requires a more careful examination. And all other organs of the body should have the same thorough examination if there is the least suspicion of their being affected. When we come to consider that all our real success (not apparent) depends upon a careful study of diagnosis, it behooves us to deliberate more on this subject, and if this paper inspires a more careful study of diagnosis it has accomplished its aim.

HOPKINSVILLE, KY.

THE MOST PRACTICABLE ORGANIZATION FOR THE MEDICAL
DEPARTMENT OF THE UNITED STATES ARMY
IN ACTIVE SERVICE.*

BY THOMAS PAGE GRANT, M. D.

Late Captain and Assistant Surgeon, K. S. G., of Louisville, Ky.

[CONTINUED FROM LAST ISSUE.]

PERSONNEL OF HOSPITAL CORPS. (H. C.)

Non-commissioned officers—chief hospital stewards, ranking as sergeant-majors; mounted hospital stewards, first class, ranking as ordnance sergeants; hospital stewards, second class, ranking as first sergeants of infantry.

Privates, first class, having the pay of sergeants of infantry; privates, second class, having the pay of corporals of infantry.

Men who have never served in the hospital corps, or as nurses in civil life, shall, when first enlisted in or admitted to the hospital corps, be known as probationers, and receive the pay of privates of infantry until they are familiar enough with the duties of their rank to be advanced to the grade of private, second class. Any probationer who does not show capacity to entitle him to be so advanced within two months shall be transferred to another branch of the service or mustered out. No man shall be advanced to another grade until he has become proficient in the duties of his present grade.

The matter of instruction of hospital-corps men has been ably discussed before the Association in the past, and will not be dwelt on here, but the hospital-corps men should become proficient in their duties as follows:

Privates, second class—Duties of a soldier of infantry: Setting up drill of infantry, facings of infantry, marching of infantry, movements of infantry, manual of arms of infantry, packing the chests, packing the furniture, packing the supplies, litter drill, handling the sick and wounded, care of the horse, care of the harness, care of the wagons and ambulance; harnessing a team; driving ambulance and wagon, loading ambulance and wagon, packing the pack-saddle, erecting the tents, striking the tents, folding the tents, care of the beds and bedding, care of the instruments, care of the hospital wards, care of the stores and supplies.

*Submitted to the Association of Military Surgeons of the United States in competition for the Bno Sanders Prize, 1902.

Privates, first class—Bandaging, dressing wounds, bathing the sick, nursing in its various branches.

Non-commissioned officers—Keeping records and accounts, drugs and dispensing, preparation of cases for operations, preparation and care of operating room, photography, supervision and control of hospital wards, assisting at operations.

The above is merely suggestive and should be elaborated in orders as, for example, under the head of Nursing, the man should be taught elementary anatomy and physiology; to give medicines, take the pulse and temperature, etc.

The writer does not deem it advisable to fix the number of hospital-corps men of the two classes, but would suggest that the grading be left to the medical officer under whom the men are working. While it would, perhaps, add a little to money cost if all the men were first-class hospital-corps privates, in the end it would be a saving to the operating expenses, for with increased skill here, as elsewhere, comes ease and economy in running the outfit, and every qualified first-class man is worth the increase in wages.

The non-commissioned officers should be promoted on merit, and not reduced in grade except for cause, after trial.

NON-COMMISSIONED HOSPITAL STAFF CORPS. (H. S. C.)

In order that the medical department shall be perfectly independent of any other corps in the matter of transportation, and to insure the proper and prompt handling of the wagons of the department, as well as to insure the protection of the drivers and other men needed in transportation by the Geneva Convention, it would seem wise to make another branch or subdivision of the hospital corps, to consist of those men who are so engaged. This is done because these men need not be trained in the duties of the hospital corps, indeed, need not have any education, but ought to be familiar with the handling of horses and erection and packing of tentage, etc., and can be transferred from the line at any time, whereas a hospital-corps man has to be perfected by long training. Therefore it does not seem wise that they should be carried under one class, as it could hardly result in anything but confusion, while by having them under separate classi-

fications this confusion would be prevented and the work simplified. This subdivision should be a part of the hospital staff corps hereinbefore mentioned, and to it should belong quartermaster and commissary sergeants, all wagon-masters, stable-sergeants, drivers, artificers, canvas-men, packers, regular cooks, and unskilled privates; they should have the same rank and pay as men of like grades in the other branches of the service.

ARMY MEDICAL SCHOOL.

The work of the Army Medical School can not be too highly commended, and the only criticism that can be made, if indeed it be a criticism, is to suggest that the gentlemen in attendance be given a little more hospital work.

It seems to the writer that it would be both wise and economical for the government to extend the benefits of this school to a suitable number of the medical officers of the militia, the National Government to provide that not less than two commissioned medical officers from each State be appointed, detailed by the Governor of the State, to attend the school each session, the cost of quarters, rations, and tuition to be borne by the National Government; the officers to be subject to the same discipline as a medical officer of the army, and dismissed for non-attendance or inattention, and barred from the school when so dismissed. From the officers who have attended the school shall be first selected any medical officers that may be needed in the future for the volunteer service.

Every officer detailed to attend the Army Medical School is supposed to be well posted in the usual studies necessary to secure the degree of Doctor of Medicine, therefore these subjects need not be dwelt on in the school, but the attendants should be instructed in hygiene, in its various departments, and in considerable detail; the diseases incident to the tropics, especially to camp life in the new possessions; photography, the management of the X-ray apparatus, gunshot wounds, first aid, the litter drill and drill of the hospital corps, the organization of the medical department of the army in its various details; the keeping of the records required in the service, and use of the forms provided; military law.

The above course, as suggested, if fully carried out will be the means of providing the service with a class of officers who will add to the honorable record that the medical department has won in the past, and will do much toward making the future work of the surgeon lighter.

ADMINISTRATION.

MEDICAL OFFICERS ATTACHED TO THE VARIOUS HEADQUARTERS.

The duties of the medical officers attached to headquarters is largely advisory and supervisory, as well as administrative, and have from time to time been clearly set forth in orders.

There should be attached to the headquarters of an army, or army corps: One surgeon-colonel, as chief surgeon; one medical inspector as inspecting officer; one hospital staff corps officer (captain) as medical storekeeper; two hospital stewards, as clerks; three privates, H. C. (or H. S. C.), as orderlies.

To a division headquarters there should be attached one surgeon lieutenant-colonel, as chief surgeon; one hospital steward, as clerk; one private, H. C. (or H. S. C.), as orderly.

It is possible to conceive of such a pressure of duties at division headquarters as to necessitate the detailing of another medical officer (surgeon-captain) as assistant to the chief surgeon, and when such is the case an orderly should be detailed to accompany him.

There should be attached to a brigade headquarters one surgeon-major, as brigade surgeon-major; one hospital steward, as clerk; one private, H. C. (or H. S. C.), as orderly.

REGIMENTAL MEDICAL ORGANIZATION.

While sentiment might, perhaps, suggest that it would be a good plan to keep the sick man with his regiment in time of war, experience has proven that, whenever it is possible, the interest of both the patient and the service are best served by sending every man whose illness is such that he is likely to be confined to his bed for more than a few days to a general (or division) hospital as soon as possible, thus leaving the regiment unincumbered with men unable to do at least

some duty. A regiment should always be in readiness to march at an hour's notice.

Each regiment will have a hospital or dispensary where the medical supplies will be kept and where the "sick call" will be sounded. There will be suitable tentage to accommodate emergency cases, and the sick who are too ill to remain in quarters until they can be sent to the division hospital or otherwise disposed of. There will also be tentage for the non-commissioned staff and men of the hospital corps—a cook-tent, latrine, and store tent. The medicine wagon, and if there are ambulances attached to the command they too, will be stationed at the hospital. This hospital is to be evacuated as rapidly as possible, and the seriously ill men be sent, if possible, to the general (or division) hospital. But where a command is operating at a distance from a base hospital, or where it is inconvenient to get the sick men away, they may be kept in the regimental hospital, which will only be done when it is unavoidable or at permanent posts.

The medical detail for a regiment should be as follows: Three medical officers—one surgeon-major, one surgeon-captain, one surgeon-lieutenant. Three non-commissioned officers of the hospital corps—one hospital steward, first class; two hospital stewards, second class. Five privates, hospital corps—one attendant at dispensary and assistant to stewards, one as cook, three medical officers' orderlies, and when practicable there should be added to the above three privates of the hospital staff corps as drivers.

Each regiment shall have as a part of its medical outfit one water-cart, one medicine and supply wagon, and one baggage wagon. When it is not possible to have hospital staff corps privates detailed for duty with a regiment, then the attendant and cook shall drive the water-cart and supply wagon, and the quartermaster shall supply a driver for the baggage wagon.

When a regiment is separated from its brigade, the chief surgeon of the division (or corps) should direct the officer in charge of the ambulance corps of the division to assign to such a number of ambulances and hospital-corps men, with the proper officers, to accompany the regiment, as in his judgment the duty before it may demand. If a regiment, while away from its division, should be permanently assigned to another division, then the officers and men, with all the

property of the ambulance corps so assigned, shall return to their proper command as soon as possible.

The efficiency, indeed the practical usefulness, of the "company bearers" is seriously questioned by military surgeons of wide experience, and it is a question if the plan of depending on them in action and immediately after a battle is not a hindrance rather than a benefit to the service. It would seem that it were wiser to return to the old plan of having the band report to the senior medical officer before an engagement. This would be better than to allow two per cent or more of the combatants, or two out of each company, to abandon the firing line, disposing of their arms in some way, perhaps losing them entirely, to act as bearers, thus weakening the fighting effectiveness that much and demoralizing the other men by their absence.

The writer does not wish to be understood as urging that none of the enlisted men be instructed in first aid; it were better if all were so instructed, but no man should be expected, indeed allowed, to leave the firing line during an engagement to assist another to the rear, even to the collecting station.

The members of the band should be thoroughly instructed in the principles of "first aid"; they should be able to stop a hemorrhage, to reduce a fracture, and apply a field dressing to the same. By this plan the band, which is of no great value during the action, would become a valuable part of the relief organization, without crippling the fighting force, as the withdrawal of two per cent of the combatants from the firing line certainly would. A band as now organized would furnish from sixteen to twenty-four bearers to a regiment; if field music be included, twenty or twenty-four additional men.

When an engagement is expected the drum-major or chief musician will march the band to the rear and report to the senior medical officer for duty as bearers and dressers. Placing their instruments in the medicine wagon (or cart), taking therefrom the litters, they will, under the direction of the proper medical officer, be assigned to squads under the junior medical officers and non-commissioned officers of the hospital corps, and as soon as it is safe go to the firing line and afford proper attention to the wounded.

When the engagement is imminent the senior medical officer of the regiment will select a suitable place for the regimental collecting station, selecting a point as well to the front as is consistent with the

safety of the detail, protected by a hill, house, or woods, if possible near a road leading to the rear.

The location of the collecting, and indeed all surgical relief stations, may be indicated by the commanding general, the chief surgeon of the army, or of the corps or division, or by the brigade surgeon-major.

It should be out of the way of the operations of the fighting force. Other things being considered, the station will be established where good water can be had. If there should be an opportunity while waiting, the senior medical officer will have the men of his detail make such preparations for the comfort of the prospective patients as the circumstances will permit, collecting wood and starting a fire, heating water, preparing coffee, soup, and other food, collecting straw for bedding, and setting up tables, etc.

The medicine cart (or wagon) containing the regimental sanitary field equipment, twelve hand litters, and a sufficient quantity of coffee, condensed soups, and other food, and the water-cart will remain at the collecting station.

The tentage of the regimental hospital and hospital outfit, with the personal baggage of the medical officers and hospital corps, will be left with the regimental wagon train, being in a wagon marked with the Geneva cross to protect it. The senior medical officer will see that the field equipment is in such position as that all parts of it are of easy access.

The collecting station will be marked with the flag of the hospital corps, as required by the Geneva Convention, and flags will be so placed as to indicate the direction to it.

The water-cart should carry not less than one hundred to one hundred and fifty gallons of filtered and boiled water in two or more containers, preferably of metal.

As soon as it is at all prudent the two junior medical officers, each with a non-commissioned officer of the hospital corps, an orderly having a supply of dressings, and suitable number of bearers, will go out to the firing line and render such aid as they can to the wounded who may need their services, and as rapidly as possible, consistent with the safety of the bearers and the wounded, get the injured men to the collecting station.

The extended order of the new regulations and the range of the new projectiles necessitate very long distances between the extremes

of the firing line and the collecting station, so that it will be almost too great an undertaking for the bearers to carry all the wounded to that point, and therefore many of them will have to be dressed on the field and made comfortable and directed to wait until they can be moved. But such as can be, and especially the most seriously wounded, ought, as far as practicable, be gotten to the collecting station as rapidly as is consistent with the safety of the relief party.

When the wounded are brought to the collecting station the medical officer in charge will see that the dressings are put on properly, and when necessary put on others, stop any hemorrhage, and make the sufferers as comfortable as possible. He will see that the more serious cases are sent to the rear as expeditiously as it can be done. He will detain the slightly wounded, and having made them comfortable, will, as soon as it is prudent, send them to join their commands. The officer in charge of the collecting station will exercise his authority in seeing that no man whose wounds are slight is allowed to go to the rear, but will order all such to rejoin their commands when able, always being sure that they are properly dressed. Medical officers at collecting stations will not attempt to perform any operations except such as are imperatively demanded to save life at the time, but will take any measures necessary to stop a serious hemorrhage. Medical officers will be particular to see that no wounded man with a fracture of one of the larger long bones is started to the rear without a temporary (or permanent) splint on to hold the bone in position.

There should be no congestion of wounded men at any point between the firing line and the field hospital, therefore the medical officers will see to it that they are moved as rapidly as possible. The brigade surgeons should as far as possible make this point a matter of careful study.

All wounded men with the colors should report every day at sick call until dismissed.

The regimental bearers, whether they be company bearers or the band acting as bearers, should be expected to get the wounded to the regimental collecting station, and from thence they will be in the care of the ambulance corps until they are turned over to the officer in charge of the field hospital.

The regimental bearers should make an effort to see that every wounded man is tagged with his name, company, and regiment before

he is turned over to the ambulance corps to be taken to the rear. The officer in charge of the dressing station (ambulance) will see that the nature of the wound is placed on the tag of every man before he is sent to the field hospital. Prisoners of war who may be wounded will receive the same treatment as though they were our own men, but will not take precedence over the wounded of our own army.

When a regiment is operating alone, *i. e.*, away from its brigade, on going into battle the senior medical officer shall establish at a suitable place of safety an ambulance station and field hospital, keeping with him the hospital steward (first class) and two or more hospital-corps men, or men of the band who can lay a bandage and render first aid, and send the others of the hospital detail to the front. The second ranking medical officer will establish the collecting station, and the junior medical officer, with a hospital steward (second class) and the bearers, will go forward to collect and aid the wounded and bring them to the collecting station, where they will receive suitable attention and be sent to the rear as hereinbefore set forth. Where there is only one or two medical officers with a body of troops they will make such modifications of these suggestions as the exigencies of the service may demand.

[TO BE CONTINUED.]

TYPHOID FEVER: ITS TREATMENT.*

BY R. E. GARNETT, M. D.

In the good old times—when our forefathers in the medical profession were fully impressed with the idea that every case of sickness must be bled and blistered, without regard to the physical condition of the patient at the time—typhoid fever was a greatly dreaded disease, and its death-rate was something fearful. When their followers, growing more cautious, discarded the lancet to a considerable extent, but held tenaciously to the belief that every particle of cool air must be excluded from the sick-room, and the patient must be covered with multiplied blankets and comforts; when the parched tongue must not be allowed to come in contact with a drop of cold water; when the bath was

*Read before the Southwestern Kentucky Medical Society, at Hopkinsville, Ky., October, 1902.

tabooed and the bowels were allowed to remain unmoved and the poisonous secretions retained, thus infecting and reinfecting the entire system, its victims were not less numerous.

A little later, when the bath and the systematic feeding of such patients was begun, the death-rate began to be lowered, and when, under this method, a percentage as great as 50 per cent of recoveries was reached, a wonderful victory over disease was announced; and indeed it was a great step in advance, but much yet remained to be done. Advanced thinkers began to reason out the plan of adding to the boon of sustaining measures and external cleanliness and cooling the still greater blessing of internal cleansing and disinfection. Then it was that the death-rate was changed to one rapidly growing less, until now, to the advanced physician, this great destroyer has lost much of its terror, for he knows that with the aid of skillful nursing he has it almost wholly within his control.

It is not my purpose to take up the valuable time of this Society in a recapitulation of all the various steps in the diagnosis and treatment of this disease, and to specify the particular drug indicated under certain conditions, for with that you are all supposed to be familiar; but I do wish, in as short and concise a manner as possible, to give you a general outline of the treatment that I have persistently followed the past six years, and which has given me almost perfect results, so that in one hundred and five cases only two proved fatal, and both of those from peritonitis due to gluttony after convalescence had set in and the cases dismissed from my care. So you might justly say these one hundred and five cases were all recoveries from typhoid fever.

As soon as I am called to any case of fever I proceed to cleanse the entire alimentary tract, and I do not desist until I am sure every vestige of waste material and debris has been swept out. I then proceed to disinfect thoroughly by means of some good antiseptic per orem (preferably a combination of the sulphocarbolates of zinc and sodium), and reinforce this with a rectal douche charged with boracic acid, or something along that line. During this time I am watching the temperature, and make it a rule to keep a chart showing the temperature, pulse, food (amount and kind), actions (kidneys and bowels), and leave a blank space in which the nurse is instructed to keep a record of anything else that occurs worthy of notice.

If there are distinct intermissions I suspect malarial trouble, and give my patient the benefit of a thorough cinchonization for forty-eight

hours. If I have purely a malarial fever this will settle the case, and I will be no longer needed, except in a general way to advise as to tonics, dietary, etc. If the fever persists in spite of this, I then proceed with a systematic course of feeding and the use of the tepid sponge bath to control the temperature, and if the fever runs high I resort to the cold pack over the bowels, in very rare cases having to use the cold bath to the entire body. While sustaining with proper food the general system, I have found it wise to sustain the nervous vitality and the heart's action without waiting for them to be lost or depressed beyond recall. I usually administer $\frac{1}{100}$ to $\frac{1}{50}$ of strychnia and $\frac{1}{60}$ to $\frac{1}{30}$ digitaline every waking hour while the fever lasts, and I also add about $\frac{1}{50}$ of aconitine during the height of the fever. If the pulse be full and bounding I use veratrum $\frac{1}{30}$ in place of the aconitine. Of course, those of you who prefer the cruder tinctures and fluid extracts may use them in place of the active principles, but I prefer to use the most concentrated forms, and freed from anything else, then I know just what I am giving, and have not that element of uncertainty about the dose that I used to encounter with the cruder forms.

I never relax my vigilance in regard to the necessity of keeping the entire alimentary tract clean and pure, and to that end I use daily flushings and some mild saline laxative, as indicated, and have the mouth, tongue, teeth, and gums thoroughly cleansed with some disinfectant, such as listerine, euthymol, etc., twice daily, having my patient swallow some of this solution each time.

I adhere as closely as possible to the milk diet, sterilizing all that is used. The room is kept cool and the air freely admitted, excluding the light only from direct contact with the patient's eyes. I make it a rule to be as cheerful as possible about the sick-bed, and while giving them every needed attention I avoid exhibiting too great solicitude about the condition of the patient. I keep watch for any complications that may arise and meet them with appropriate measures, but my experience has shown me that if I can keep my patient clean within and without, and sustain the vital powers as outlined above, very few complications arise, and not much else is to be done.

This plan of treatment has robbed the dread typhoid of most of its terrors to me, and instead of seeing the dry, parched tongue, the cracked lips, the glassy, staring eyes, the low, muttering delirium, and frequent death that I used to see in my boyhood days, when almost every case of typhoid fever died, I see my patients resting quietly, with a tempera-

ture ranging from 100° in the morning to $101\frac{1}{2}^{\circ}$ in the evening, and even less, with very little tympanitis, rarely ever a hemorrhage, and almost never any bad effects left behind after a sickness ranging from two to five weeks. My death-rate has been decreased to almost nothing; the average duration has been cut down from eight, ten, or twelve weeks to two to five weeks, and my average income per case about one half. On the other hand, I am the richer by many times by reason of a clear conscience, a sense of duty faithfully discharged, and by a greatly enlarged clientage. Some of the "has-beens" and their followers are disposed to make fun, and claim that my cases are not typhoid, because of their mildness and short duration, but in the eternal fitness of things this will be set right, and when they have all adopted my plan, or a better one, then their cases too will be milder and shorter, and they will be able to see, the scales having fallen from their eyes.

I had intended compiling my records of a number of cases, but the short time allotted me was not sufficient to arrange them properly, so I will just say in a general way that with rare exceptions the temperature never ranged over 102° in the evening, and that in the majority of cases the range was even lower than that after I had once gained control of the fever. In quite a number of them, after the fifth day the temperature never went above 101° , dropping to a point slightly subnormal at some time during the day after the tenth day.

I do not claim any special merit for myself in this matter, for every bit of my treatment was demonstrated to be correct by others, and I simply chose from all and combined in my own the good points in treatment evolved by my predecessors and compeers. Of course, in the practice of every active physician there is a probability of being called into cases that have been allowed to roll along in the old way without attention until the system has become so thoroughly saturated with the ptomaines from the typhoid germs that no amount of stimulation or treatment will avail anything, and where it is impossible to get the alimentary tract clean; then, of course, death is the inevitable result. It is also evident that there are cases (but they are extremely rare) where the poison is so overwhelming from the start that nothing can be done, but as a general proposition I can safely say that any intelligent physician who will keep his typhoid patients clean within and without, sustain the vital powers by proper nerve and heart support and judicious, sterilized feeding, allow his patients plenty of fresh air and light, and control the temperature by the tepid bath or cold pack

over the bowels, and will keep him cheerful and hopeful by proper conduct in the sick-room, and will promptly and efficiently meet complications as they arise (and he will not have many), will just as surely succeed in restoring his patients to good health and usefulness as the day follows night.

GLASGOW, KY.

DIFFERENTIATION OF VARICELLA AND VARIOLA.*

BY EWING MARSHALL, M. D.

Chairman Medical Staff Home for Friendless Women, Etc.

The differentiation often is so simple that it looks like wasted time to delve into this subject, but in the last few years, in my opinion, many atypical cases of chicken-pox have been classed as smallpox, and have entailed so much trouble, anxiety, and expense, both upon the individual and upon the community at large, that I thought it worth our time to discuss the subject.

Varicella or chicken-pox, water-pox, glass-pox, swine-pox, etc., is an acute, specific, mildly infectious, eruptive disorder met with in childhood, characterized by a cutaneous exanthem of vesicular type, which comes out in successive crops, and is accompanied by mild febrile symptoms. The eruption terminates by desiccation and the formation of superficial crusts in from three to five days. One attack confers immunity for the rest of life. Although resembling variola in some respects, it has no relation to that disease.

History. Probably known to the Arabians, but was lost sight of for centuries, and was certainly not accurately described by Sydenham, but was described in France by Rivière in 1660. Several tried to separate it from variola. Fuller, in 1730, wrote: "The pestilence can never breed the smallpox, nor the smallpox the measles, nor the crystals the chicken-pox, any more than a hen can breed a duck, a wolf a sheep, or a thistle figs; and consequently one sort can not be preservative against any other sort."

Thomson, of Edinburgh, in 1818, again confounded varicella and variola, and Hebra, of Vienna, agreed with him that varicella was but a modified form of variola.

*Read before the Louisville Clinical Society, November 4, 1902.

Variola is an acute, highly infectious, and contagious disease met with in all climates and characterized by the sudden onset of a high fever, followed in a few days by an eruption on the skin, which is the most constant and conspicuous feature. It goes through various stages of development, from macules to pustules, and is finally cast off in the form of various-sized crusts, leaving more or less cicatrization. The mucous membranes, especially those exposed to the external air, may likewise, though to a less extent, be implicated. It is preceded and accompanied by marked constitutional symptoms, which vary according to the stage and severity of the disease. Like the other exanthemata, it has a latent stage or period of incubation, and not infrequently gives rise to various complications, which coexist or follow as sequelæ. Its fatality is high, but varies greatly in different epidemics.

Last spring, in a family of great prominence, there was a case of smallpox which caused almost universal anxiety to our citizens. About this time I was called to see a boy, F. M., nine years of age, with a violent attack of chicken-pox. The eruption was very profuse, and extended not only over the face, scalp, and body, but over both upper and lower extremities, many papules being found in both palms and soles. I watched the case very carefully, and maintained the diagnosis of chicken-pox. Some of the pocks certainly suppurated, but I believe none that were not irritated in some way.

Staying with the family at this time were a gentleman and lady accompanied by their nephew, W. B., also nine years old. These two boys had been almost inseparable for several weeks prior to the morning when the rash appeared. From that moment they were separated and guarded. F. M. had a very severe case of varicella. Fever lasted five days and the temperature ran high. Two nights he was very restless, and one night he hardly slept at all.

During the time while F. M. was ill W. B. was several times taken over to New Albany on the Daisy cars. About this time Southern Indiana was supposed to be full of smallpox, and Kentucky was threatening to quarantine against her. On May 30th I found the eruption on F. M. On June 3d I was called to see W. B., and found a few irregular rose-colored spots on his arms, but reserved my opinion, saying possibly they were due to indigestion. On June 5th I saw W. B. again, and the rose-colored spots were unchanged. After I saw him on the 5th he was removed to a country place back of New Albany, Ind. On June 10th, in the afternoon, they telephoned me he had a

new eruption. I saw him on the morning of the 11th of June, and found him covered with a papulo-vesicular eruption from his head to his heels. I found papules in both palms and soles; also some patches in the buccal and pharyngeal cavities. The temperature ran high. I made diagnosis of chicken-pox on the score of the irregular coming of the eruption, the temperature continuing high after free appearance of rash, and the rash appearing in crops.

Often when a case is first seen, when the attack is atypical, there is great difficulty in making a positive diagnosis. On the one hand the danger to the community and on the other the distress to the individual make the duty of the attending physician an onerous one. Declare it variola, and the inmates of the establishment are put to immense inconvenience, to say nothing of the expense, when if they are removed to the pest-house unnecessarily they may be infected with smallpox, or their condition injured by the transportation, etc. Call it varicella, and leave the household and its dependencies unprotected by segregation, and you scatter the trouble broadcast through the community. Extreme prudence should be used. Certainly every prophylactic measure should be scientifically carried out. Every one that has been or may be in the slightest way exposed should be vaccinated.

Now as to the differentiation: Incubation is so indefinite in both varicella and variola that it is of no assistance. I have looked up some fifteen or twenty authors on this subject, and they vary from one week to three weeks for varicella, and from one week to two weeks for variola.

Much stress is laid on the collapsing of the vesicle by several authorities, but Corlett says sometimes varicella vesicles do not completely collapse when punctured. Sometimes vesiculation is delayed as long as twenty-four to forty-eight hours.

Some authorities state varicella eruption never appears below the knees. I have repeatedly seen, in otherwise typical cases, papules on the legs and soles. Several authorities record this fact.

Another differential point claimed by some is that varicella eruption never appears on mucous membranes. I have frequently seen it. Corlett, Holt, and Osler all mention having seen the mucous membrane involved. Corlett, in his late work (the *Acute Infectious Exanthemata*, 1902), reports it rather the rule to have a few in the pharynx and also in the buccal cavity as well as on the other mucous membranes.

I base my diagnosis of varicella upon:

1. The eruption not following the regular course, but appearing on several portions of the body simultaneously.
2. The evolution, as a rule, is rapid.
3. The eruption comes in crops.
4. Suppuration is the exception except where a pock is irritated and infected.
5. The temperature does not fall but goes higher, commonly with vesiculation.

The Fabian policy is certainly wise in this trouble. Do not be too hasty; take every scientific precaution, and temporize until the diagnosis is clear.

LOUISVILLE.

REPORT OF A CASE OF ARTICULAR RHEUMATISM, WITH PECULIAR HEART ACTION.*

BY H. S. TAYLOR, M. D.

I was called at 9 a. m. Saturday, March 15, 1902, to see J. F., a man twenty-seven years of age, farmer, weight 175 pounds, of phlegmatic temperament.

Said he had been up and down the day before, and had slept none the previous night. Found his heart missing from every third to every tenth beat, with pulse about 100, counting the misses; temperature 101.4°; complaining of the left shoulder and right hip and knee. Tongue clean but rather red, and bowels slightly constipated, with headache.

Gave him compound cathartic pills for bowels, acetanilid comp. for headache, and put him on tincture of digitalis, ten drops every four hours, and four grains each of Dover's powder and sulphate of quinine internally at same time. Saw him Sunday at 9 a. m.; had rested badly during the night; headache gone; other joints of lower limbs involved; bowels slightly moved, tongue still clean. Heart-beats missing about the same; pulse 112, temperature 102°. Left off acetanilid and quinine; continued digitalis and Dover's powder, adding one-sixtieth grain strychnine solution every four hours, with whisky.

Saw him again at 3 p. m.; symptoms about the same, except temperature one half degree higher; continued same treatment, and prepared

*Read before the Southern Kentucky Medical Association, Adairville, Ky., April, 1902.

ten grains of calomel in three doses, to be given every two hours, with two compound cathartic pills at 9 p. m., at which time I saw him again. I found symptoms about the same, with pulse slightly faster and temperature 108°. Continued same treatment, and added ten-grain doses salicylate of soda every four hours.

During this day, but especially in the afternoon and evening, he seemed rather strangely affected, being inclined to sleep, but after sleeping a very short time he would awake frightened and say he thought he was dying, or would imagine he was going up through the ceiling, etc. By being propped up in bed he rested much better, and slept well.

Saw him Monday at 2 p. m. and found him resting better, with bowels moving freely. Heart-beats apparently perfectly regular, with a pulse of 56, and, as I thought, just half what it would have been if not missing every other beat, but the indication was that of a slow pulse, and had it been my first visit I could have made nothing else out of it. His tongue had a thin coating of high color, for the first time. The joints first involved were much better, but his wrists were red, swollen, and painful, and he could not use his hands. Continued same treatment, except substituted one-eighth grain sulphate of morphia every six hours for the Dover's powder.

Tuesday, 2 p. m.: Heart missing every third beat and pulse 64, or 96 counting the misses. Temperature 100.4°; slept well the night before. Continued same treatment.

Wednesday, 9 a. m.: Heart regular; pulse 72, temperature 98°. Could use his hands to take his food, and wanted to eat. Had slept nearly all night. Continued the same treatment at longer intervals, leaving off the morphine.

Thursday morning symptoms same; tongue clean, when I dismissed him.

I regard this case as unique from the extreme irregularity of the heart-action, as I have never before seen anything approaching it, and also from the speedy subsidence of the disease, the active or acute symptoms all giving way and convalescence being fully established in less than one week.

TYPHOID FEVER: WITH RARE COMPLICATIONS.*

BY T. H. GARVIN, M. D.

On August 20th I was called by Mr. W. C., aged twenty, who said that he was feeling badly, had slight frontal headache which had persisted, on rising each morning, for two or three days, with bowels slightly constipated. I gave him four half-grain calomel tablets to take, one every three hours until they were taken or until the bowels moved well. Then to take twenty-four grains quinine with twelve grains phenacetine, divided into six capsules, one every four hours. The third day after taking the quinine, making it the 23d of August, he felt much better and went to work. On August 24th he went to Glasgow, sixteen miles away, and drove back a lot of mules that worried him very much—so much that he was pretty well exhausted when he came home that night; he felt chilly and feverish all night—had bad headache.

I saw him at eight o'clock on the morning of August 25th and found him quite ill; temperature 102.5° , pulse 90° . The temperature went up to 103° ; bowels inclined to be loose, acted three or four times during the day. From the time he went to bed on the 25th of August the fever remained about the same, morning temperature 101.5° to 102° , evening temperature about 104° ; bowels slightly tympanitic, with three or four movements each day, of the characteristic typhoid actions, for ten days, when the fever began to slowly decline, which continued until the 24th of September, when it ceased altogether. His tongue had cleaned completely; he began to want nourishment, and was feeling, as he expressed it, all right. During the time from the 25th of August until the fever subsided there was no delirium. He took milk and meat broths sufficient to keep him very well nourished.

Two days after the fever had subsided he noticed that his tongue was a little bloody. It annoyed him for several hours. Getting worse, he called in Dr. M. L. Garvin, who gave him some listerine to wash his mouth with, and a solution of alum, which he used freely, but it did not arrest the issue of blood.

I saw him on the night of the 27th of September and gave him tannic acid and alum in solution, but that did not control the hemorrhage. Dr. M. L. Garvin applied a solution of adrenalin chloride over the tongue and

*Read before the Southwestern Kentucky Medical Society, Hopkinsville, Ky., October, 1902.

also to the gums, as there was the same characteristic issue from them. The issue became worse all the time, until he seemed to be nearly exhausted. We then used Monsel's solution over the tongue, and packed borated cotton, wet with Monsel's solution, between lips and over the gums, and gave fluid extract ergot freely, which seemed to stay the bleeding for a short time. I then called up Dr. W. O. Roberts, of Louisville, and gave him a brief history of the case and what we had done. He suggested that we give him adrenalin chloride internally in fifteen-drop doses every four hours, which we did in addition to the fluid extract of ergot. On the 28th day the nose began the same way, and the blood flowed so freely that we plugged the nose with cotton wet with Monsel's solution, which arrested the hemorrhage to some extent, and at this time there were some movements from the bowels that contained blood. The temperature at this time was 102°. Purpuric spots were noticed over the face and one over the right eyelid, including the eyebrow. Spots continued to come out until they were over the entire body, though very sparse. There was no issue of blood from any except the mucous membranes. The size of the purpuric spots ranged from a mere speck to as large as one's fingernail. At this time there was some delirium, with a fall of temperature to 97°, at which point it remained until death, which occurred on the twenty-ninth day of his illness.

I report this case from the fact that the complication is a very rare one to me, as it is the first I have met with in a practice of thirty-five years, and I learn from my professional brethren that none as yet have met with a similar case.

HORSE CAVE, KY.

OBSCURE CASE OF INTESTINAL OBSTRUCTION.*

BY B. F. FYKE, M. D.

Unless a physician makes a thorough examination of the causes of ailments in his patients and carefully analyzes and fully comprehends the symptoms of the case, many of his efforts at treatment will come to naught. All physicians are prone to become routinists in the practice of medicine; when one cause is found to explain a symptom, we begin the application of remedies.

* Read before the Southwestern Kentucky Medical Society, Hopkinsville, Ky., October, 1902.

The following case of obscure intestinal obstruction with complications, I trust, may prove interesting: Mr. S., aged seventy-two, farmer; a subject of indigestion and chronic constipation for twenty-five years, with an attack of colic occasionally. He was troubled with right inguinal hernia for eight years, but never wore a truss; never had any trouble in reducing the hernia until July 9, 1901. While drawing water from a cistern with a rope and bucket he had a protusion of the hernia, with an attack of very severe pain in the left inguinal region, with sick stomach and vomiting. He attempted to reduce the hernia, as he had done many times before, but failed; he continued to manipulate the hernia until night, when he sent for his physician. The doctor made many attempts to reduce it, but failed. The sick stomach and vomiting increased, and the hernial mass grew to be very tender. On July 10th the doctor's son was called in, and he and his father continued trying to reduce the hernia until Sunday, July 14th. Dr. W. was called in to do an herniotomy. This was done, with complete reduction of the mass, but with no alleviation of the symptoms.

On Tuesday, July 16th, Dr. W. was called back to see the patient, but was unable, and asked me to see the man for him. I did so, and found him semi-conscious, pulse very fast and weak, respirations slow and shallow, skin cold, with suppression of urine; he only made efforts at vomiting now. I made a diagnosis of intestinal obstruction with auto-infection or toxemia. I reported to Dr. W. my diagnosis, with a prognosis that the man would not live thirty-six hours. I saw the patient the next day and found no improvement—all changes were for the worse. At this visit I asked for an autopsy. The man died at four o'clock p. m., July 17th, nine days after the attack. I made an autopsy at eight o'clock p. m. in the presence of three other doctors. The autopsy revealed the fact that the wound from the operation was healing by union by first intention; there was no obstruction in the small intestines. It looked as if my diagnosis was wrong, but I continued my explorations of the abdomen and found an obstruction in the colon at the sigmoid flexure. There I found a complete stenosis of the bowel by stricture. The obstruction was so complete that the gas could not be forced through the bowel. From this point on the colon was not as large as my middle finger.

SPRINGFIELD, TENN.

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"*NEC TENUI PENNĀ.*"

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THE PLAGUE IN SAN FRANCISCO.

There has never been the least doubt in the mind of any one who cared to listen to the truth, that the bubonic plague has been in San Francisco since July, 1901. The recent newspaper exposure by the Evening Bee, of Sacramento, has given the facts to the public in a very forcible manner, and the editor of that paper is to be congratulated upon his bold and fearless attack upon the health board of San Francisco. The health board of that great and beautiful city, in their eagerness to protect its commercial interest, permitted their better judgment to yield to the persuasions of their commercial brethren, who had not the knowledge or foresight of the great calamity that would befall their city if it should become thoroughly infected with this most fatal disease. Their actions in this matter have destroyed their value to a great extent, because the public will no longer believe their statements concerning the city's health.

From the very beginning bacteriological examinations confirmed the diagnosis of each case that occurred. The Marine Hospital reports were always correct. A commission was sent by the United States Government, composed of Professor Simon Flexner, of the bacteriological department of the University of Pennsylvania; Professor F. G. Novy, of the department of bacteriology and hygiene of the University of Michigan, and Professor Lewellys G. Barker, of a similar

department of the University of Chicago. Each of these men has an international reputation as a scientist. Flexner and Barker were members of the Philippine Plague Commission, and studied plague in India and China as well. Novy went abroad especially to study plague.

The inspection by this commission began on the 6th of February, 1901, and continued for ten days, at the end of which time they reported that a sufficient number of cases had been observed by them to conclude beyond possible doubt that cases of bubonic plague were occurring among the Chinese.

The proofs presented by Drs. Flexner, Novy, and Barker were so overwhelming that the Secretary of the Treasury, Lyman T. Gage, felt called upon to insert the following in his annual report for the year 1901:

The existence of bubonic plague in San Francisco, which was first reported on March 8, 1900, and of which mention was made in the last annual report, was confirmed by a commission appointed by the department, consisting of three bacteriologists of the highest reputation, who had had no previous connection with government service.

This commission reached San Francisco in February, 1901, and after an exhaustive investigation rendered a report so conclusive in its nature as to result in measures being taken to cleanse Chinatown, where the plague existed.

The number of cases found from March 8, 1900, to July 8, 1901, was thirty-four. Sixteen additional cases were reported between July 1st and November 15th of this year.

And yet these honest, conscientious, able, scientific men have been abused like pickpockets by the press and by the governor of California. The governor of California is evidently in the wrong, and the sooner he acknowledges the fact the better it will be for him and those whose interests he is supposed to protect. It is useless in these days of demonstrable facts to act unless the facts have been procured beforehand. The good governor of "the Golden Gate State" may have listened too attentively to the political side of the question, and in that way grounded his political boat upon the scientific breakers erected by Messrs. Flexner, Novy, and Barker.

THE Chicago Clinic has established a bureau of information concerning the health resorts of America. The following is taken from a circular received a few days since :

Service to Physicians. The bureau is now able to furnish to the American physicians full and complete data on all of the American resorts. The information given is as follows :

The location of the resort and the best means of transportation from any point, with the transportation rates and time schedules of transportation companies.

The climatic conditions of the resorts, with summer and winter climate, altitude, character of the country, liability to fogs or high winds.

Hotels, with exact character of their accommodations, their rates, methods of heating, and bathing facilities.

The mineral springs, if any, with latest analyses, classifications and the therapeutic claims for same, with contraindications, as well as the indications for their use. A special effort is made to separate the truth from the unfounded claims of the mineral waters and the medical authority for every claim will be given when possible.

In Short. We desire to give information of every kind to the physician in the form of personal and confidential letters, pointing out the disadvantages as well as the advantages of each resort, and we will gladly include our opinion as to the availability for any particular cases if so desired. Information will be given entirely without cost to any physician addressing the Chicago Clinic and Pure Water Journal, 3632 Forest Avenue, Chicago.

Current Surgical and Medical Selections.

ACUTE ALUM POISONING.—Dr. Julius Kramolik reports the case of a young man, aged thirty years, who by mistake drank a swallow of an approximately 10 per cent solution of alum which he had prepared as a gargle for a sore throat. Neither the mouth nor the throat showed any marked reaction to the irritant, but the patient vomited thirty-nine times within the forty-eight hours following the ingestion of the alum. Palpation of the stomach was painful. Mucus was found in the vomitus, mingled with blood, imparting a chocolate color to the mass. The urine was stained by blood, and showed morphologically numerous red blood cells, few leucocytes, and few hyaline casts. Traces of albumen were also present. The patient was ill for at least thirteen days.—*Pester Medicinisch-chirurgisch Presse.*

TREATMENT OF ADDISON'S DISEASE.—Dr. Edgard Hirtz suggests that the antituberculous treatment of this affection is entitled to consideration. On this theory, superalimentation and attention to the renal secretions are very essential. Milk, eggs, and light wines are advisable. Lecithin, sodium cacodylate, glycerophosphates, and inhalations of oxygen are useful. Reports from various observers would seem to show the value, in some instances, of opotherapy. The author gives the suprarenal capsules of one-sixth of a grain, two to four times a day. Subcutaneous injections as employed by D'Arsonval are also recommended.—*La Medecine Moderne*.

THE PRIMARY SUTURE TREATMENT OF FRACTURES.—Volcker (*Centralblatt für Chir.*) states that it is an assured fact that a good result in a case of fracture depends upon the replacement of the fragments, and the experience of the last few years has shown that under careful asepsis one may cut down on the fractures when there has been a bad result, break up the adhesions, freshen up the ends of the bone, and then place and maintain the fragments in good position by either wires or screws, or some other appropriate appliance. In many cases, especially those of separation or fracture of the epiphyses, is the operation a difficult one, and in every case there is the danger of infection. The cases so treated, as a rule, unite much more slowly than when not sutured, and a fistula may result. The principal indication for the use of the primary suture is in those cases of compound fracture where operative interference is a necessity. This operation is indicated in double fractures of the same limb. Experience has shown that those fractures where one is most anxious to get a good result, as in those involving a joint, the primary suture method has not proved to be a success, but future experience may prove that it will have some value in this type of cases.—*Progress of Medical Science*.

SPINAL ANESTHESIA WITH TROPA-COCAINE.—Neugebauer (*Wiener klin. Woch.*, No. 50-52, 1901, abstracted in *Centralblatt für Chir.*, 1902, No. 31) states that Schwartz has reported very satisfactory results with this drug in doses of 0.25 c.cm.; Bier has had a similar experience. The solution should be freshly prepared each time. The instruments should not be laid in carbolic solution before use, for in two cases in which this was done poisoning resulted. Anesthesia usually begins at the end of a minute, and appears first in the perineum, then the genitalia, the posterior portion of the thigh, the feet, the legs, and finally in the inguinal and abdominal regions. In the lower extremities one may be sure of absolute anesthesia of the skin incisions, and almost always of the deeper tissues and bones. The serosa remained painful in a Bassini operation and also in an extirpation of the rectum. The anesthesia remained longer in many cases in operations on the extremities in the leg which was full of blood than in the other one, in which the circulation was normal. In thirty-nine cases a 0.005 c.cm. solution was used with success, and in eighteen cases 0.006 c.cm. The author states, in conclusion, that the freshly prepared dose of 0.05 or 0.06 c.cm. of tropa-cocaine is an absolutely sure and harmless method of inducing anesthesia of the lower extremities, perineum, and neighboring regions.

PLAGUE THROUGHOUT THE WORLD IN 1898-1901.—The Local Government Board has just issued a series of important reports and papers by Dr. R. Bruce Low upon the progress and diffusion of bubonic plague throughout the world in the years 1898-1901 and upon the measures employed in different countries for the repression of this disease. The reports are prefaced by an introduction from the pen of Mr. W. H. Power, F. R. S., medical officer of the Local Government Board. Dr. Low's reports deal first of all with the British Isles, then with European countries, excluding Turkey. Next he goes on to consider plague in the near East, which includes a consideration of most of the highways by which infection from the Orient gains access to Europe. This section includes Turkey in Europe, Egypt, and the countries adjoining the Levant, the Red Sea, and the Persian Gulf. Section IV deals with the rest of Africa, Section V with India, Section VI with the far East, Section VII with Australia and New Zealand, and Section VIII with America—*i. e.*, with the United States and with the various countries in Central and South America. Mr. Power considers that the time has not yet come for summarizing the lessons to be learned from the present pandemic, but certain points of great interest are apparent from Dr. Low's investigations. First of all, plague would seem to be specially virulent among Oriental peoples. In India, for instance, which is well prepared for resistance to disease as regards sanitary administration, plague is far more virulent and more prone to recur than in many other countries in other quarters of the world, which are not nearly so well equipped administratively for resistance. Another very important point comes out in these papers—namely, the way in which plague at the first outbreak often mimics other diseases. This, of course, is especially the case where the disease is not of the bubonic type. Thus in Glasgow the earliest cases were provisionally notified with a query as "enteric fever" or as "typhus fever." In Oporto the earliest cases were declared to be those of a virulent fever of an uncommon type, "the result of insanitation and general neglect"; in the village of Thomaso, near Smyrna, the earliest cases were taken to be "infectious pneumonia" or "malignant influenza." At Port Said, so far back as March, 1900, although plague was not officially declared until May, 1900, cases had been certified as "influenza with glandular swellings" or as "'pneumonia." The question as to how far man is in danger of infection from the rat is still quite undecided. The reports are well illustrated with maps, and the volume contains a mass of most useful information.—*The Lancet.*

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Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

ON THE PREVENTION OF INFECTIOUS DISEASES.

BY E. J. KEMPF, M. D.

[CONCLUDED FROM LAST ISSUE.]

Diphtheria is a specific disease characterized by a local fibrinous exudate. The etiological criterion is the presence of the Klebs-Loeffler bacillus, by which true diphtheria is distinguished from other forms of membranous inflammations. The disease was known to Aretæus and to Galen. Epidemics occurred during the Middle Ages. Pierre Bretonneau, of Tours, was the first to grasp an understanding of the disease, and gave it the name of diphtheria. The most important event in the history of the disease is the discovery of the serum treatment, called the antitoxin treatment. This discovery was made during the last few years by Behring and others.

Isolation of the sick, disinfection of the clothing and of everything that has come in contact with the patient, careful scrutiny of the milder cases of throat disorder, and more stringent surveillance in the period of convalescence, are the essential measures to prevent the spread of the disease. Suspected cases in families or schools should at once be isolated or removed to a hospital for infectious diseases. When a death has occurred from diphtheria the body should be wrapped in a sheet which has been soaked in a corrosive sublimate solution (1 to 3000), or sprinkled with formaldehyde and placed in a closely sealed coffin. The funeral should always be private, and the corpse should be buried within a few hours after death.

The chief danger of the spreading of the disease is from the milder or ambulatory cases. Such cases mingling with susceptible children convey the disease to them. The healthy members of a family in which diphtheria exists may carry the disease to those with whom they come in contact. A very important matter in the prophylaxis relates to the period of convalescence. Much can be done in such cases by insisting that the sputum of such convalescents be destroyed for several months, or even longer.

Spitting on the pavements, on the floors of houses, on the floors of street cars, etc., is a public nuisance, if for no other reason than that diphtheria germs may remain latent in the throat of a convalescent from diphtheria for as long a time as six months, and that mild cases of diphtheria may occur in a person and run its course without being suspected.

Measures for the prevention of diphtheria and other infectious diseases vary in different States, but the main features are always isolation of the patient, placarding of the infected houses, and disinfection of the patient, the attendants, and the surroundings.

At the meeting of the Conference of State and Provincial Boards of Health of North America, held at Niagara Falls on September 13-14, 1901, the following resolutions on the prevention of diphtheria were adopted and submitted to the local boards of health as recommendations :

1. In all cases of sore throat, which may be reasonably suspected to be diphtheria, a report of such fact should forthwith be made by the attendant to the health officer.

2. Specimens should be taken at once by the health officer or attending physician from the throat or nose from such suspected case and sent to an approved bacteriological laboratory for examination.

3. During the time between the sending of the specimen and the report strict isolation of the patient should be maintained.

4. Whenever the presence of the bacillus diphtheriæ is in any manner reported by an approved bacteriologist, the house must forthwith be quarantined, and a plainly printed notice thereof, including the name of the disease, must be posted in a conspicuous place thereon, and guards stationed if necessary.

5. It is the duty of the attending physician to report to the local health officer, to take and forward to the State board of health, or other approved bacteriological laboratory, specimens from the throats of those reported to him exposed to diphtheria, and pending a report thereon to see that isolation is maintained.

6. It is the duty of the health officer to place in quarantine those who, after exposure to clinical diphtheria, are reported from the laboratory to be infected with bacillus diphtheriæ.

7. After proper disinfection, quarantine should be released to those houses in which diphtheria has been diagnosed when synchronous specimens taken from the noses and throats of all persons quarantined have been pronounced free of bacilli by a bacteriologist approved by the State board of health.

8. After the laboratory diagnosis of diphtheria has been given it shall be the duty of the health officer to see that specimens from both nose and throat of the patient are forwarded by himself or the attending physician to the laboratory at least once a week after the clinical symptoms have subsided, until negative reports for both nose and throat are obtained.

9. Those who have been brought in contact with diphtheria patients, and in whose throats diphtheria bacilli have been found, may be released from quarantine when both nose and throat specimens, on examination by an approved bacteriologist, no longer show the presence of diphtheria bacilli.

10. When the diphtheria bacillus exists for a period of more than three weeks after the disappearance of all throat symptoms, the bacillus should be isolated in pure culture and its virulence tested upon guinea-pigs at the request of the health officer. If the bacillus is not found virulent the quarantine may be released. As these experiments will take from five to ten days, later specimens ought to be sent to the laboratory, since they may show the absence of all diphtheria bacilli before complete determination.

11. All specimens sent to the laboratory should be reported upon in writing by the bacteriologist on the morning following their receipt; provided, however, that such report should be made by telegram by request.

12. In country districts, where it is not possible to use the laboratory finding as a means of regulating quarantine, those suffering from diphtheria should be quarantined for a period of not less than four weeks from the appearance of the disease.

Tuberculosis was known to the Greeks under the name of phthisis, literally wasting or consumption, which expresses in a graphic manner its most prominent symptom. It, however, included all kinds of wasting diseases, such as abscesses, gangrene, etc. Since the days of Laennec phthisis is more properly known as pulmonary tuberculosis. Tuber-

culosis is sometimes called the white plague, as more deaths are due to this dread disease than from any other known source, not excepting war or famine.

In 1882 Koch announced the discovery of the bacillus tuberculosis, probably one of the most important discoveries of modern times. It is now generally admitted that tuberculosis is a specific disease, that it is an inoculable disease, and that it takes rank in nosology as a virulent affection with smallpox, syphilis, etc.

Probably no part of the subject of tuberculosis is more involved in error than that which bears upon the mode of entrance of the tubercle bacillus into a host. The errors on this part of the subject moreover have been made the basis of error on others. The conclusions which may be drawn from our present knowledge upon the implantation of the tubercle bacillus may be summarized as follows :

“ 1. The seed supply for new implantations of tuberculosis is derived almost entirely from human sources, especially the sputum of consumptives.

“ 2. Seed supply for new implantations of tuberculosis can be derived from animal sources.

“ 3. The tubercle bacillus enters a host through the lymphatic system in the alimentary canal, the respiratory tract, and the skin.

“ 4. The forces which convey the tubercle bacillus into a host are the lymph current and the blood current.

“ 5. The place of deposit is no indication of the port of entry of the tubercle bacillus, except when deposit has been made in the bronchial lymphatic glands or in the mesenteric lymphatic glands.

“ 6. Interference with the circulation of a part, whether by traumatism, inflammation, or vaso-motor disturbance prepares the part for tubercular deposit.

“ 7. Germination and colonization do not always follow tubercular deposit.” (Philadelphia Medical Journal, 1902.)

In the prevention of tuberculosis the destruction of the sputum of the consumptive patient should be a routine measure, both in hospital and private practice. The sputum of a phthisical patient should be carefully collected and destroyed. The patient should not spit about carelessly, nor should he swallow the sputum, but he should be urged to always use the spit-cup. No better way to destroy the sputa is known to me than to spit on a rag or a piece of paper and then burn them in a stove. When a spit-cup is used the sputum should be either burned or destroyed with chemical disinfectants.

The proposition to isolate and quarantine consumptives, to forbid them to land in or return to this country or to sojourn in parts of it climatically favorable to the disease, is cruel, unnecessary, and will have no effect whatever upon the extension of the disease. But it should be insisted upon that a tuberculous patient occupy a separate room and a separate bed. Experience and common sense dictates this partial isolation of the tuberculous patient.

Just what constitutes soil for the tubercle bacillus we do not know. Whatever it may be, it undoubtedly exists in a greater degree in some families than in others and can be transmitted from parent to offspring. Apparently it also wears out in time and gives place to a partial or complete immunity. It is still a disputed point whether tuberculosis is a disease which can be inherited, but it is no longer a disputed teaching that the predisposition to the disease—the soil—is transmitted from parent to child, and people who are known to have this inherited predisposition should be very careful how they expose themselves to the liability to acquire the disease. Such people should not nurse tuberculous patients nor live with them.

Syphilis. Evidence of syphilis appears in the bones found of prehistoric man. A description of a disease which undoubtedly was syphilis is found in the writings of ancient China, Mexico, Greece, Rome, and in the sacred writings of the Hebrews. The history of syphilis from the fifteenth century becomes a history of international traffic and of geographical discovery, as the disease seems to be more virulent amongst people to whom it was hitherto unknown.

Syphilis is a specific infectious disease, always occurring in consequence of transmission from a diseased to a sound individual and always transmitted as such. The nature of the virus is still in doubt, and further observations are required before the question can be settled. A constant feature of this disease is the oft-recurring attempt of systematic regulation of prostitution to prevent the spread of the disease. Osler says two measures are available, the one personal, the other administrative. The one measure I describe under personal purity, and the other under systematic regulation of prostitution, in Professor Osler's own words :

“ Personal purity is the prophylaxis against venereal diseases which we as physicians are bound to advocate. Continence may be a hard condition, harder to some than to others, but it can be borne, and it is the duty of the physician to urge this lesson on young and old who seek

our advice in matters sexual. Certainly it is better, as St. Paul says, to marry than to burn, but if the former is not feasible there are other altars than those of Venus upon which a young man may light fires. He may practice at least two out of the five means by which, as the physician Rondibilis counseled Panurge, carnal concupiscence may be cooled and quelled—hard work of body and hard work of mind. Idleness is the mother of lechery; and a young man will find that absorption in any pursuit will do much to cool passions which, though natural and proper, can not in the exigencies of our civilization always obtain natural and proper gratification.

“A systematic and rigid regulation of prostitution by the State is a point as yet much disputed as to, on the one hand, its difficulty of carrying out, and, on the other hand, as to public sentiment being bitterly opposed to it. If the offender bore the cross alone, I would say, forebear; but the physician behind the scenes knows that in countless instances syphilis has wrought havoc among innocent mothers and helpless infants, often entailing lifelong suffering. It is for them he advocates protective measures and strict surveillance of prostitution.

“Legal punishment should be instituted of the criminal who willfully gives another a horrible, lethal, or worse than lethal disease. It should be an all-sufficing ground for divorce, and no insurance company should be allowed to give a policy to any applicant who has, or who has ever had, venereal disease. Marriage of such patients should be interdicted. Forty-one per cent of all pelvic inflammations in women are pronounced due to supposedly-cured male gonorrhea and fifty per cent of all sterility to the husband's gonorrhea. Why should syphilis and gonorrhea be omitted from the list of infectious diseases of which the law prescribes notification and punishment for willful spreading? Surely they are highly contagious and ruinous? Why should the public spare its worst enemies, the breakers of the most primary laws of ethics and pathology?” (American Medicine.)

Communicable Diseases. Several of the diseases of the skin are contagious or infectious, caused by vegetable or animal parasites. Among the prevalent diseases which preventive medicine can forestall are syphilitic skin diseases, syphilis, scabies, favus, pediculosis, lupus, and echthyma. Persons afflicted with any of these diseases should be isolated and treated and cured before they are allowed to go at large.

The barber-shop is a place where skin diseases, especially syphilis, are frequently transmitted to innocent and unsuspecting customers. The following rules are for the guidance of the tonsorial artists:

1. Use razors, combs, and brushes made wholly of metal.
2. Throw out the puffs, sponges, and sticks of alum.
3. Sterilize towels, razors, shaving mugs, combs, and brushes before and after using.
4. Keep within reach bowls filled with antiseptic solution for cleansing the hands after washing them with soap.
5. Use no cosmetic which has not been previously subjected to antiseptic treatment.
6. Reject any customer whose scalp or skin is affected, or gives evidence of being unhealthy, and refer him to a licensed practitioner of medicine.

Bakers, grocers, bricklayers, plasterers, and barkeepers suffer from eczema, and artisans who handle chemicals and other irritants exhibit various grades of dermatitis. Hostlers may contract glanders, and wool-sorters may become infected with anthrax. These diseases can all be prevented by those exposed to them by using the proper precautions.

Scarlet fever, measles, retheln, mumps, and whooping-cough are diseases classed among the infectious diseases, occurring principally among children, the spreading of which can be prevented by means of the three modes of prevention known to preventive medicine—isolation, quarantine, and disinfection.

Quarantine is unnecessary after proper disinfection. This is the conclusion reached by most sanitary authorities. The reserve of doubt consists in the uncertainty as to what is proper and thorough disinfection. Physicians, nurses, etc., in attendance upon smallpox patients do not convey the disease to others when adequate precautions have been taken. It is even contended that an exaggeration and extension of quarantine regulations after the patient has been removed, without thorough fumigation, tends to increase the number of cases, while with perfect disinfection of the house, etc., and with plenty of fresh air and sunshine there is no danger whatever of the multiplication of cases. This rule applies to all infectious diseases against which quarantine and disinfection is practiced.

At the meeting of the Conference of State and Provincial Boards of Health of North America, 1901, the following resolution was adopted relating to smallpox and scarlet fever:

Resolved, That the isolation of the person or persons afflicted with smallpox or scarlet fever, and of the nurse or nurses attendant upon such

person or persons, shall be absolute. That such isolation shall continue for a period of not less than four weeks from the first appearance of the eruption, and as much longer as may be necessary to secure complete desquamation and a healthy condition of the throat and nose, the necessary period to be determined by the health officer in charge.

It is preferable to remove all patients who suffer from an infectious disease to an isolation hospital, where they can have the proper care and attention; but if this be not practicable and they must be kept in a private house, an upper room should be chosen, or at least one which is back from the street. All needless articles of furniture should be removed, but after the patient once is in the room nothing should be removed until the disinfection has been made. A card of warning with the name of the disease printed on it should be tacked on the front part of the house near the point of entrance. If necessary, a guard should be placed near the house to prevent ingress as well as egress. After the patient is pronounced convalescent, and after the proper disinfection has been made, the isolation as well as the quarantine should not be unnecessarily prolonged.

Disinfection. The most important part of disinfection, which in itself would be a vast subject to be treated upon, is that which applies to rooms and dwellings and to hospitals where the sick were confined. The more simple the process the more welcome will it be to the people, among whom it does not enjoy great popularity at present. It is questionable whether it is necessary at all in some cases, especially under the conditions where the urine and feces are the sources of contagion, since these materials are not likely to find their way to the walls of the room. It is otherwise when the *materius morbi* comes from the mouth, as in diphtheria and tuberculosis. In such cases a more thorough disinfection is needed, as also in the exanthemata.

Formaldehyde offers probably the best satisfaction at present for house disinfection, and gives good satisfaction for general disinfection. A remarkable instance of formaldehyde disinfection is reported in the *Cleveland Medical Journal* by Dr. Martin Friedrich, the health officer of Cleveland, who in a remarkably short space of time exterminated smallpox in the city of Cleveland with formaldehyde. Dr. Friedrich was aided by forty medical students from the colleges in Cleveland. They disinfected every section of the city in which there had been cases of the disease, and every house in the section, whether there had been smallpox in it or not. Every nook and corner of the house was

visited, and special attention was paid to clothing which had been stored away, presumably full of germs. Besides this general disinfection, the whole city, its yards, streets, alleys, sewers, etc., was cleaned up and put in a nearly perfect sanitary condition.

Formaldehyde disinfection is carried out in the following manner in my practice :

Into a dry-goods box having a cover, place the clothing one at a time, sprinkling each one with one or two tablespoonfuls of 40 per cent formaldehyde, mixed with an equal quantity of water. Allow the box to remain closed for five or six hours, then open and hang the garments in the open air.

The room to be disinfected is made as air-tight as possible and all its surfaces are exposed; closet doors are opened, and their contents, together with the contents of the drawers, which are left open, are removed and scattered about; mattresses are set on end; pillows, bedding, clothing, etc., are suspended from lines stretched across the room or spread out on the chairs or other objects so as to expose all sides; books are opened—in short, the room and its contents are so disposed as to secure free access of the gas to all parts as fully as possible. Upon this preliminary preparation largely depends the thoroughness of the disinfection.

For every one thousand cubic feet of space in the room a sheet is suspended from a line stretched across the middle of the room. Properly sprinkled, this will carry without dripping five ounces of formalin (the 40 per cent solution of formaldehyde), which is sufficient to disinfect one thousand cubic feet of space. As many sheets as necessary are used, hung at equal distances apart. The ordinary, rather coarse, cotton sheet should be used in order to secure rapid evaporation. Formaldehyde forms a gas by evaporation when sprinkled over a surface. The sprinkling is done by means of a spray producer, as it is found by experience that the freest evolution of the gas, with the minimum production of paraform, is secured from very minute drops of the solution, individually scattered on the evaporating surface—not touching nor running together. The room is left closed not less than five hours, after which it is thrown open as freely as possible to the light and air.

There are other ways of disinfecting houses, rooms, and hospitals, but it is impossible to even enumerate them in a paper of this kind. One of the cheapest and best is the old-style sulphur fumigation,

especially against such diseases as diphtheria, follicular tonsillitis, tuberculosis, etc.

Smallpox. The disease known as smallpox is said to have existed in China many centuries before Christ, and vaccination as a preventive measure was practiced by them. The *pesta magna* described by Galen is believed to have been smallpox. During the Crusades it became widespread. It was brought to America in the sixteenth century. The most trustworthy study of the disease ever made was in the seventeenth century by Sydenham. Special events in the history of the disease are the introduction of the inoculation of smallpox by Lady Mary Montagu into Europe in 1718 and the discovery of vaccination by Jenner in 1768. The nature of the contagium of smallpox is still unknown.

Jenner made his first vaccination upon the human subject in 1796, and in 1800 the practice was introduced into Germany, France, and the United States. The practical usefulness of this great discovery lies in the possibility of transmitting vaccinia from the cow to the human individual and making him immune to the smallpox. Isolation, quarantine, and disinfection are, of course, useful auxiliaries of vaccination, but never again in the history of an enlightened world will they act as substitutes. Vaccination is too firmly based on science and experience ever to be neglected. Vaccination and revaccination are mostly to be relied upon in the prophylaxis against smallpox.

"The experience of a century has demonstrated that: (1) Vaccination in infancy, renewed at the end of childhood, renders an individual practically as safe from death from smallpox as if that disease had been survived in childhood, and almost as safe from an attack. (2) In the face of an epidemic, vaccination of all who have not been vaccinated within five or six years is giving the benefit of the doubt. Every one who has been vaccinated in infancy and childhood should be vaccinated not less than once in adult life. (3) The immunity conferred by vaccination is in direct proportion to the thoroughness with which it is performed, and this is shown with considerable accuracy by the character and number of the resulting scars. (4) Vaccination in infancy alone is not sufficient wholly to prevent smallpox among the adult population. (5) Optional vaccination has not proved sufficient to protect the community from smallpox. Compulsory vaccination is warranted by experience. (6) The mild compulsion enforced in this country by requiring vaccination or evidence of its recent performance upon

admission to the public schools should have the hearty support of parents and physicians alike.

"Without the aid of the public sanitary authorities the medical practitioners can do but little, but with ready coöperation the prevalence of smallpox could be largely reduced. How much would it cost to vaccinate every citizen? Certainly, a small part of that now wasted in curing, quarantining, and burying. Let us have compulsory vaccination!" (American Medicine.)

A warm solution of boric acid is the best solution for use in disinfecting the skin of the arm, and the best and simplest form of instrument is the ordinary needle. The antiseptic glycerinated vaccine lymph should be blown out upon the area of skin which has been cleaned and disinfected. The skin put slightly on the stretch is then scarified through the droplet of lymph. In this way the corium is thoroughly opened up and the emulsion brought into intimate relation with the cells of the true skin. No so-called shield should be used, but the arm should be guarded, and if it gets very sore it will be well to dress with simple ointment and gauze dressing.

Fevers. The ancient writers were acquainted with the paroxysmal fevers and the tumefaction of the viscera consequent on exposure to what is now called malaria. Hippocrates attributed these to the use of marshy waters; but Galen and Avicenna recognized the existence of a marsh poison which contaminated the air. For ages it was supposed that vegetable decomposition, moisture, and a certain degree of heat caused exhalations which brought on fevers.

The word malaria was used by Dr. Barker in the Fothergillian Prize Essay for 1859, and signifies bad air or malaria. This bad air was supposed to be the cause of intermittent, remittent, and congestive fevers. It was also supposed to cause many neuralgic affections, congestion of the liver, enlargement of the spleen, and the so-called malarial cachexia. Malaria is a term which covers a multitude of mistakes in diagnosis, and the use of the word in connection with diseases by the old-style physician recalls to our mind the words of Arnold de Villeneuve, who lived in the twelfth century, and we shall be pleased to quote his words in a modernized form—"Particularly use the word malaria, since it is not understood and it is of the greatest importance that people should not understand what thou sayest."

"Competent students have said that the greatest enemy of the human race and the most profound cause of the slowness of the exten-

sion of civilization has been malaria. The most fertile regions of the globe are the tropics, and in these the Caucasian carriers of civilization have been unable to live on account of this fatal disease. The blacks have acquired immunity, but the black does not proceed naturally beyond savagery and barbarism. Medical science has just discovered the method of propagation of malaria and of preventing the same, so that it is confidently predicted that the white races will soon overrun the tropics and extend the world's civilization. Yellow fever can also be exterminated from these regions, as has been proven in Cuba, and will add to the same tendency. All of this happens at a time when the nations of the earth seem furiously driving to extend themselves by colonization and expansion to every part of the habitable globe. Thus by means of what would at first seem a trivial discovery in scientific medicine the ancient barbarisms of the tropics will come to an end. The fact shows how intimately medicine and civilization are bound together, and how dependent upon our science are all the great movements of peoples and the advances of humanity." (*American Medicine.*)

As was shown by Smith and Kilborne and substantiated by Koch, certain insects are the carriers of the infective organisms of Texas cattle fever. Manson and Ross have demonstrated that a certain species of mosquitoes are the carriers of the malarial infection for human beings. They found the evolution cycles of the resistant form of the malaria parasites in the bodies of anopheles, while in man the parasites assume the asporulation phase, so that man is merely the temporary host of the parasites. According to Mattei, the evolution cycle of the malaria parasites consists, therefore, of a chain of two rings—man and the mosquito—man infected with malaria infects healthy mosquitoes, and the infected mosquitoes infect healthy persons, thus completing the cycle. The species of mosquito which appears to be principally, if not entirely, concerned in carrying malarial infection to man is the anopheles.

Supposing this theory to be true, the prophylaxis against malaria now becomes a very simple matter, and consists in the destruction of the mosquito.

Yellow fever is a specific infectious disease contracted by exposure in infected localities. The recent theory concerning the disease is that it is spread by the bite of infected mosquitoes. This theory was first advanced by Dr. Carlos J. Finlay, of Havana, in 1881. The species

of mosquito which serves as the intermediate point or host in yellow fever has been identified as *Culex fasciatus*, Fabr, as determined by the observations of several scientific physicians. The latest views are: "First, reproduction of the disease, in a mild form, within from five to twenty-five days after having applied contaminated mosquitoes to susceptible subjects; second, partial or complete immunity against yellow fever obtained even when no pathogenous manifestations had followed these inoculations."

The United States Government has formally recognized the influence of mosquitoes in the transmission of yellow fever, malaria, and filiarisias. A general order has been issued by Major-General Wood at Havana to the different post commanders, in which the troops are enjoined to observe two precautions:

1. They are to use mosquito-bars in all barracks, hospitals, and in field service in general.

2. They are to destroy the larvæ or young mosquitoes by the use of petroleum on the waters where they are bred. Permanent pools or puddles are to be filled up. To the others are to be applied one ounce of kerosene to each fifteen square feet of water twice a month, which will destroy not only the young but also the old mosquitoes. This does not injure drinking water if drawn from below and not dipped out. Protection is thus secured, according to the order, because the mosquito does not fly far, seeks shelter when the wind blows, and thus each community breeds its own mosquitoes.

Rabies. Hydrophobia or rabies is an acute infectious disease of animals, dependent upon a specific virus, and communicable to man by inoculation. All animals may have the disease, but it occurs most frequently in the wolf, the cat, and the dog, and is chiefly propagated by the latter, which is specially susceptible to hydrophobia. The nature of the poison is as yet unknown; it has a special affinity to the nervous system, and is found in the secretions, especially the saliva. The period of inoculation in man varies from six weeks to three months.

Pasteur's method of treating persons who have been bitten by rabid animals is the only way of preventing the disease from breaking forth in the person who has been inoculated by a rabid animal. Other prophylactic measures against the disease may be considered to be the proper licensing and keeping of domestic animals in civilized communities and the eradication of wild animals. Animals found to be

suffering from rabies should be killed at once and their bodies should be cremated.

The value of the preventive treatment is well brought out by statistics. In Hungary, from April 15, 1890, to December 31, 1900, 5,899 persons were bitten, of whom 4,914 were inoculated, with a mortality of 1.2 per cent, while the mortality among those who did not take the treatment reached 14.94 per cent.

Actinomycosis. The specific organism of actinomycosis grows on cereals and grasses, and when implanted in the body manifests itself by the formation of ulcers, or a pale yellowish vascular tumor perforated with various sized holes containing pus, which presents a superficial resemblance to the interior of a tuberculous or gummatous deposit. It infiltrates all the tissues, being carried by the vascular channels as emboli and deposited in distant parts of the body. The head and neck are affected in 55 per cent of cases; the digestive tract in 19 per cent; the lungs in 14 per cent; the skin in 2 per cent, and doubtful, 5 per cent. The only sure diagnostic feature is the discovery of the sulphur granules in the discharge from sinuses or abscesses or in the sputum or stools. There is danger of not recognizing actinomycosis because of its obscure and ill-defined symptomatology and its close resemblance to several much commoner lesions. The prognosis seems to depend on the possibility of a radical extirpation of the growth and on the presence or absence of secondary infection.

Army Diseases. What constitutes the real value and efficiency of a trained army is the health of its individual members. Sickness does more to render an army inefficient than any other cause. History abounds in references to the military epidemics of antiquity, such as the destruction of the army of Sennacherib; the plague described by Thucydides during the Peloponnesian war; the pestilential diseases spoken of by Diodorus Siculus and by Livy as having made great ravages in the Roman and Carthaginian armies, and the great losses that the army of Severus sustained in the marsh of Caledonia. We know from history of the ravages of scurvy and leprosy in the army of the Crusaders, of the prevalence of typhus fever in the armies of the sixteenth century, and at the same epoch of the fearful havoc made by syphilis in the French army in Italy. The principal diseases to be feared by armies are dysentery, cholera, typhoid fever, yellow fever, typhus, measles, smallpox, scarlet fever, scurvy, venereal diseases, malaria, and the parasitic skin diseases.

Army and navy sanitation has greatly improved during the present century; the surgeons of the army, at least in the United States, are

among the best in the country. Surgery has been as efficient as in civil practice, and the army field hospital has been greatly improved during the last few years. Emergency packages are given to the soldiers to use on the field of battle, and with the improved guns of modern warfare the soldier is more often wounded than formerly, but does not die so quickly. The soldier is now furnished with improved barracks, better food and clothing, and after his honorable discharge a liberal pension is given him if he is in need or is an invalid either from disease or injury.

Says George M. Sternberg, Surgeon-General United States Army: "The measures to be taken for the prevention of disease among our soldiers naturally fall under two principal headings, viz.: (a) Those which relate to the maintenance of a high standard of resisting power on the part of the individual units of the army, and (b) those which relate to protection of these individuals from infection by any of the various disease germs which have been proved by experience to be the principal causes of sickness and mortality among soldiers. Under the first heading we have to consider food, clothing, ventilation and heating of barracks, exercise, etc. The second involves a precise knowledge of the morphological and biological characters of all known disease germs, of the mode in which they gain access to the human body, and of the best means of destroying them. There was no scientific basis of preventive medicine until this precise knowledge with reference to the etiology of infectious diseases was obtained. The effort to combat epidemics of cholera, plague, etc., by the firing of cannon and burning of bonfires was not irrational in the Middle Ages in view of the theories then held. But we now know that disease germs are not disseminated through the atmosphere of infected localities, and having a precise knowledge of where to find them and how to kill them, are able to formulate directions for the prevention of these pestilential diseases which, if fully carried out, would no doubt lead to their utter destruction."

Two factors must be considered in the prevention of infectious diseases, first, the germ, and second, the soil. Disinfection must be relied on to destroy the germ, and isolation and quarantine will protect the soil from many of the germs. Thus the object of disinfection is to prevent the extension of infectious diseases by destroying the specific agents or germs which give rise to them, and the object of isolation and quarantine is to keep the germ from getting to new victims.

Many an adult prides himself on the fact that he has had the mumps, measles, smallpox, scarlet fever, and other diseases during his younger

days, and is consequently immune against the diseases, but he forgets at what a fearful cost he has run the gauntlet, and how many human beings have fallen victims to the germs which he has bred in his body whilst he was acquiring immunity.

The future of preventive medicine promises better things than the ability to say "I've had 'em."

JASPER, IND.

THE MOST PRACTICABLE ORGANIZATION FOR THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN ACTIVE SERVICE.*

BY THOMAS PAGE GRANT, M. D.

Late Captain and Assistant Surgeon, K. S. G., of Louisville, Ky.

[CONTINUED FROM LAST ISSUE.]

MEDICAL ORGANIZATION FOR ARTILLERY.

When a battery is attached to a brigade, or is acting independently, it shall have a dispensary tent where the hospital supplies are to be kept, the "sick call" sounded, and which will serve the medical officer as an office. There should also be a cot or two in it to accommodate those who may be too sick to stay in quarters, until they can be sent to a base hospital.

There should be a detachment chest (medical and surgical) and such mess and cooking outfit as may be demanded for the use of the detachment, as well as such other equipment as may be required to accommodate one or two emergency cases.

There should be an ambulance permanently attached to each battery of light or field artillery.

The personnel of a battery medical detail should be: One medical officer, surgeon-captain or surgeon-lieutenant; one hospital steward or private qualified to act as attendant and capable of dispensing drugs; one private, hospital corps, as medical officers' orderly; one private, hospital staff corps, as ambulance driver.

When four or more batteries are acting as a battalion it shall have same medical organization as a regiment.

*Submitted to the Association of Military Surgeons of the United States in competition for the Eno Sanders Prize, 1902.

AMBULANCE CORPS, ORGANIZATION AND OPERATION.

There shall be assigned to each division of the army an ambulance corps so organized that it may be divided into three companies, and to each army corps an extra ambulance corps, which may be temporarily assigned to the cavalry brigade or to the artillery brigade (if there be one connected with the corps), or given such other assignment as the chief surgeon of the corps may deem best.

The unit of the ambulance organization shall be the division ambulance corps, and each corps so organized shall be known as "The Ambulance Corps of the ——— Division of the ——— Corps of the U. S. A.," and all ambulances and other wagons, carts, as well as the other articles of the outfit, shall be so marked with the name and number of the ambulance corps.

The ambulance corps shall be under the control of the chief surgeon of the division, subject, of course, to the direction of the chief surgeon of the army corps.

When it becomes necessary to divide the ambulance corps into companies the medical officer in command shall make such assignments as in his judgment shall be best for the service before the several companies. The division into companies shall not be permanent, but at the conclusion of the designated service the assignment shall cease and the corps become a unit again.

PERSONNEL OF A DIVISION AMBULANCE CORPS.

Nine medical officers—one surgeon-major, commanding; two or three surgeon-captains; five or six surgeon-lieutenants.

Three officers of the hospital staff corps—one first lieutenant, two second lieutenants.

When the ambulance corps is acting as a unit one of these officers shall act as adjutant, one as quartermaster, and one as commissary of the corps. When the corps is divided into companies one of these officers shall be assigned to each company, and shall discharge the duties of quartermaster and commissary to such company. They may also be placed in tactical command of the men to drill them or to take

charge of them on the field, thereby relieving the medical officers from that duty so they will be free to attend to the more strictly surgical branch of the work.

Thirty-one non-commissioned officers of the hospital corps—one chief hospital steward, who in addition to his other duties shall act as sergeant-major of the corps; twelve hospital stewards, first class; eighteen hospital stewards, second class; one of these non-commissioned officers shall be detailed as assistant to the corps quartermaster, and one to the commissary when the corps is a unit.

One hundred and fifty privates of the hospital corps to serve as nurses, dressers, litter-bearers, medical officers' orderlies, etc. These men are trained and drilled in the duties of the hospital corps.

Six musicians.

Nine non-commissioned officers of the hospital staff corps—three sergeants, six corporals.

These non-commissioned officers shall be the stable sergeants, wagon-masters, canvas-men, etc.

Thirty-nine drivers.

Three cooks.

Two artificers—one blacksmith, one saddler.

Two extra men, skilled laborers preferably.

All of whom shall belong to the hospital staff corps.

Each ambulance corps shall have twenty-seven ambulances. Each ambulance shall have in it at least two, and better four, hand litters, a suitable supply of dressings, and a supply of such medicines as will be useful in an emergency, all to be kept in a closed locker. Also one or more containers of filtered and boiled water (about ten gallons), two water buckets, four extra lanterns—one red and three white.

Three medicine and supply wagons (or carts) containing such modification of a regimental field equipment as shall be judged suitable for the work before the ambulance corps; a liberal supply of extra dressings, and a few extra hand litters. There shall also be a camera (photographic) and a supply of films or plates.

Three water-carts, each carrying about one hundred and fifty gallons of filtered and boiled water in two or more containers, preferably of metal.

Nine wagons for tentage and baggage. Each wagon shall have in it one pick-ax, one hatchet, one ax, one saw, and two shovels.

These tools shall be marked with a number showing to what wagon they belong.

One traveling forge, complete.

It will facilitate the keeping of the records if every vehicle belonging to the medical department shall be so marked as to show to what particular corps, division, and use it belongs, and if the other property, so far as practicable, shall be so marked, it will be well. It is much easier to keep a record of articles that can be identified than those that have no marks of identification.

DUTIES OF THE AMBULANCE CORPS.

When there is reason to expect a battle within a short time—a few days or hours—the chief surgeon of the division will notify the chief of the ambulance corps of his division to divide his corps into companies; this being done, the commanding officer of the corps will direct one company to report to the brigade surgeon-major of each brigade for duty. The brigade surgeon may indicate the position he wishes the ambulance company to take, but unless he does so the medical officer in command of the company will select the site for the ambulance dressing-station when he shall have reason to believe that the battle is about to begin.

The dressing-station shall be about the center of the brigade when in line of battle, and approximately from two thousand to twenty-five hundred yards behind the firing line, selecting a protected place if possible, and easy of access; here the commanding officer will establish his station.

PERSONNEL OF DRESSING STATION.

Two medical officers; four non-commissioned officers, hospital corps—two first class and two second class; one musician; one cook and two hospital corps privates as helpers; five privates, hospital corps, as dressers; two privates, hospital corps, as medical officers' orderlies; one non-commissioned officer, hospital staff corps, in charge of wagons; five drivers (privates), hospital staff corps.

Having located the dressing-station, the men who remain there will at once, under the direction of the medical officer in charge, set

about getting it in working order; operating tables will be set up, water boiled, food prepared, instruments arranged—in short, all will be done that can be to lighten the labor ahead of the detail and add to the comfort of the sufferers when they arrive. The hospital flag will be hoisted to mark the station, and markers placed to show the way to it. The medicine wagon, water-cart, and three tent and baggage wagons will remain at the dressing-station, and forge wagon, if it be with the company.

The lieutenant, hospital staff corps, will be governed by the orders of the medical officer commanding the company; he will either stay at the dressing-station or accompany the ambulances. If he is with the ambulances he can be assigned to command a section of them.

One medical officer will take charge of the remainder of the company, and move forward to within one thousand yards or less of the firing line, where he will establish an ambulance rendezvous station.

The company will be organized so that it may be divided into two or three sections, each acting independent of its fellows.

Operating from the ambulance rendezvous station there will be:

One medical officer in command; four non-commissioned officers, hospital corps (two first class and two second class); thirty-six privates, hospital corps, as bearers; one private, hospital corps, as medical officers' orderly; one musician; nine ambulance drivers, hospital staff corps; nine ambulance orderlies.

The ambulances will, as rapidly as is consistent with the safety of the detail, remove the wounded from the regimental collecting stations to the dressing-station, and they will assist, if needs be, the regimental bearers in getting the wounded off the field. As soon as the wounded have been removed from the field and collecting stations, the ambulance company will return to the dressing-station and assist there, and under directions of the proper officers will carry the wounded to the field hospitals.

To facilitate the adjustment of future pension claims, all wounds should be photographed as soon as possible, either at the ambulance dressing-station or in the field hospital, and as frequently thereafter as the surgeon in charge of the case may deem wise. This is a matter quickly and easily done, and the cost is but a trifle. Therefore there should be a man at each ambulance dressing-station charged with the duty of "snapping" the wound and making a suitable record

on a printed form, which will be fastened around the roll of film when it is removed from the camera. This record and picture, with any subsequent pictures and records, will be filed with a history of the case for reference in case of an application for a pension or in preparing a history of the case for any purpose. A camera taking a 5x7 or 4x5 picture, with a gross of film rolls with twelve exposures each, can be carried in a box containing a cubic foot, and the weight will not exceed ten or fifteen pounds.

On the march the officer in charge of the ambulances will see to it that no one rides in them except the members of the corps, except by permission of a medical officer, unless it is obvious that to refuse such permission would be to the serious injury or cause unnecessary suffering to the men. The greatest care and discretion must be used in this matter, that no injustice is done. Nothing that does not belong to the ambulance corps for use in its work should be hauled in an ambulance on the march unless by special orders of the proper authority (the chief surgeon of division or corps), and the officer immediately in charge of the ambulances should be held responsible for any violation of this rule, and any attempt of any superior or other officer to prevent him from doing his duty in this or any other matter should be promptly reported to the chief surgeon of the division or corps, who will lay the matter before the commanding officer of the division or corps, who will place the offending officer (or officers) under arrest and bring him or them to trial for disobedience of orders.

The horses or mules belonging to the ambulance corps should not be taken or used for any other purpose under any pretext.

ORGANIZATION OF FIELD HOSPITALS.

Owing to the extended order of modern regulations, a regiment of infantry will cover about three thousand yards when on the firing line, while a brigade will present nearly two miles of front to the enemy. It will be unwise to attempt to do with less than one field hospital to each brigade. These hospitals should be so planned that they can be divided into two sections, and if necessary, one remain on the field while the other goes forward with the line. The hospitals should be based on an estimate of one hundred beds each, and equipped accordingly.

On the eve of an engagement the general commanding or senior medical officer will indicate the site for the field hospitals, although it is possible, indeed probable, that their location will be fixed by circumstance rather than by choice. The field hospital will be located about two or three miles in the rear of the firing line, in some place of comparative safety, out of the range of the artillery fire, and if possible where there is good supply of water, fire-wood, straw, and such other crude comforts as will be appreciated by tired and wounded men. There is but slight probability under the most favorable conditions of the tentage and baggage coming up for hours after the battle is over; indeed, the chief of the field hospital may congratulate himself if he gets his medicine wagons through in a reasonable time. Hence the field hospital should be located where shelter can be had, in a house or shed; if, as it probably will be, it can not be evacuated before nightfall or in case of rain.

As soon as the site for the field hospital is selected the whole staff of medical officers, non-commissioned officers, and privates should set about preparing for the work ahead; fires will be lighted, water boiled, straw collected, coffee and food prepared, so that when the wounded begin to arrive there will be no delay in doing these things. Instruments and dressings have to be brought out and placed ready for immediate use. If the wagon containing the operating tables has not come up, some expedient must be resorted to to improvise one, as well as other needed conveniences for an operating room.

Probably at no time will medical officers and hospital-corps men have a more abundant opportunity to display their ingenuity than in making ready the field hospital; if they will use the things that are at hand they can add much to their own comfort in working and to the comfort of the wounded who may be brought in for attention. As fast as the circumstances will admit the wounded must be sent to the rear to the intermediate or base hospital. As before suggested, no man should be sent or brought to the field hospital whose wound is of so trifling a character that he will not need more than a dressing, hence all cases in the field hospital must go to the rear, and that as fast as possible, so that the field hospital will be free to move forward with the fighting men. If it is impossible to clear the wounded away from the field hospital before night, or if the weather should be inclement,

they should be made as comfortable as possible for the night, either in sheds, houses, or if the tentage be available, under tents.

The duties before the medical staff of a field hospital will require the following personnel:

Three medical officers—One surgeon-major, as commandant and chief of operating staff; one surgeon-captain; one surgeon-lieutenant.

Four non-commissioned officers, hospital corps—two hospital stewards, first class; two hospital stewards, second class.

Twenty-five privates, hospital corps; one dispensary assistant; four operating assistants; twenty nurses and dressers.

Four non-commissioned officers, hospital staff corps; two sergeants; two corporals.

Two cooks, one artificer, ten drivers, eleven privates, hospital staff corps; two cooks' helpers, nine canvas men, property men, and helpers.

For the transportation of the equipment of the field hospital there should be one medicine wagon, nine wagons for baggage, tentage, etc., two water-carts, each carrying one hundred and fifty gallons of water in two or more containers, preferably of metal.

MEDICAL SUPPLY DEPOTS.

There should be at suitable points in the United States three or four general supply depots, which will be receiving as well as disbursing depots. These depots should be located with a view to the prompt handling of supplies, both incoming and outgoing, so that there should be no delay in filling requisitions. These depots should each carry a stock large enough to equip at least two army corps with every article called for by the supply table of the medical department to prevent any shortage of supplies at the front, where such shortage might cause great suffering. To properly man such a depot would require a large force, and being located well within our own territory they will probably be operated by civil employes for the most part, but it will of course be under the command of an officer of the medical department, a hospital staff corps captain of suitable age and experience, or a medical officer who has had experience in purchasing supplies for the department. For the reason that these depots will be largely operated by civil employes, no attempt will be made to indicate what should be their personnel.

Every division shall have an advance medical supply depot attached to it, and from which the medical officers of the division shall procure their supplies as needed. This depot shall be open the whole of every day, and if need be at night. The officer in charge shall see to it that every requisition is filled within twenty-four hours after it is received, and no requisition shall be held back because of a lack of any articles called for not being in stock, but such articles called for as may be on hand shall be forwarded at once, and if the lacking items are of urgent importance the medical officer making the requisition shall be authorized to purchase them at the expense of the government, on the receipt of the statement of the medical purveyor that he is unable to furnish them. Or if a medical officer shall make a requisition for supplies and the same is not filled *at once*, and there be an urgency for any item called for, the officer making the requisition shall, with the approval of his immediate commander, be authorized to purchase so much of the needed articles as will answer his necessities, and certify the same to the chief surgeon of the division, who will endorse the same and forward to the surgeon-general for payment.

Medical purveyors will exercise great care to see that no article in their stock becomes exhausted before making a requisition on the general (or intermediate) supply depot for a new supply of the same.

The supply depots shall be located at such points as may be designated by the commanding officer of the corps, or division, or by the chief surgeon of the same, if the commanding officer does not do so. Preferably in a house, for the better protection of the stores against the weather and trespassers, and a suitable guard should be detailed to protect it at all times. Each medical officer of the command should, as far as possible, be advised of the location of the depot, which should be marked, as are all other places occupied by any part of the medical department, with a hospital flag.

When the division moves forward it should also move, and during an engagement be behind the line of field hospitals at some safe place. During and after a battle the field or advance depot should be open to fill such requisitions as may come from the front without any delay. This depot should have a good stock of supplies, especially of the expendable articles and dressings. The personnel of this depot should be as follows:

One officer, hospital staff corps (first lieutenant) in command as medical purveyor.

Two non-commissioned officers, hospital corps—one hospital steward, first class; one hospital steward, second class.

One non-commissioned officer, hospital staff corps—quartermaster-sergeant.

Eight privates, hospital staff corps—five drivers; two packers; one orderly.

Such a supply depot would demand at least five wagons to transport it.

At the base of a corps organization, or headquarters, there should be an intermediate medical supply depot, with practically the same personnel as above, but in charge of a captain of the hospital staff corps. This depot should be movable, and always within easy reach of the advance supply depots at the front. Having to serve as a reserve for three or more divisions, there will have to be a larger stock in this depot, which will require a slight increase in the number of non-commissioned officers and privates, as well as transportation.

In the rear of the line of field hospitals will be established the advance medical supply depot, as hereinbefore indicated.

ORGANIZATION OF INTERMEDIATE HOSPITALS.

When the distance between the field hospital and the base hospital is too great for the wounded to be removed there at once with the transportation at hand, there shall be an intermediate hospital established, one for each division. It should have accommodations for at least two hundred and fifty men, and should have a personnel as follows:

Nine medical officers—one surgeon-major in command and chief of operating staff; two surgeon-majors; three or four surgeon-captains; two or three surgeon-lieutenants.

One officer, hospital staff corps (first lieutenant) as quartermaster and commissary.

Six non-commissioned officers, hospital corps—three hospital stewards, first class; three hospital stewards, second class.

One non-commissioned officer, hospital staff corps, as quartermaster-sergeant.

Forty-one privates, hospital corps—thirty-two as nurses, nine as medical officers' orderlies.

Fourteen privates of hospital staff corps—four cooks; two cooks' helpers; three ambulance drivers; five extra men.

If the intermediate hospital is provided with tentage and cots, it will require in addition to the above one non-commissioned officer, hospital staff corps, as quartermaster-sergeant; nine privates, hospital staff corps, as drivers, as well as nine wagons for its transportation.

[TO BE CONTINUED.]

HAY FEVER: ITS ETIOLOGY AND TREATMENT.*

BY BENJAMIN L. W. FLOYD, M. D.

Member of Ohio Valley Medical Association, American Medical Association; Delegate to British Medical Association in 1901; Formerly Assistant at Royal London Ophthalmic Hospital and Central London Nose, Throat, and Ear Hospital, etc.

Ever since the writings of Bostock, in 1819, this trouble has had a distinct place in medical literature. He observed it occurring in persons that were around new-mown hay, and from that it took its name.

Blackney, who was a sufferer from hay fever, thought that it was excited by pollen. With some people the attack comes on in June, or even in winter, but the most common time is from the 15th to 20th of August.

Kyle claims that this is a trouble that affects the educated rather than the illiterate; more common in those that endure mental and nervous strains than those that endure physical labor; that there is an inherited tendency to it; more common in men than in women, and in the American and Englishman than any other nationality, and almost unknown among the Indians and negroes; that it rarely occurs before puberty, but reports a case in a child two years of age who suffered from hay fever, whose parents were also sufferers from it.

It is a singular fact that even in Asia and Africa the Anglo-Saxon race is usually the only sufferers from hay fever.

Pollen is not the only excitant, for Kyle mentions an instance of a parent and children who could not go around horses without exciting an attack that would last for hours, and would return again when similarly exposed.

*Read before the Ohio Valley Medical Association, Evansville, Ind., November 6, 1902.

Osler cites the case of the late Austin Flint, who could not sleep on a pillow made of certain kind of feathers without having an attack of coryza or asthma. Odors from certain kinds of trees, as the peach and plum, the ragweed, roses, ipecac, ammonia, chilling of the body, and mental emotions, have all been thought to be excitants of hay fever, but by many the ragweed and golden rod are thought to be the most common excitants.

While there must be an excitant in order to have hay fever, there are two other conditions that are just as essential, namely, a hyperesthesia of the terminals of the sensory nerves, located usually in the nares, but may be in other portions of the body, and a neurotic diathesis. Second, hypersensitive areas in the nares will be found quite frequently in sufferers from hay fever, and the location, size, and number are variable. Frequently they are found on the anterior and posterior tip of the inferior turbinate, and others on the septum and middle turbinate. Quite often an attack can be produced by merely irritating these sensitive areas with a cotton applicator.

Now, if these areas could always be located and removed or destroyed when possible and expedient, I see no reason why hay fever could not be cured by being treated locally, but unfortunately these areas can not always be located, and to go in and promiscuously destroy mucous membrane, tissue, and nerves would be quackery, and the result would be far worse than the original trouble.

Frequently hay fever patients' nares will be found quite as normal as other persons not so affected, hence the difficulty of locating these areas. Why these pathological areas exist in the nares or other portions of the body is not definitely known.

Hay fever never kills, and hence we are deprived of an autopsy and microscopical examination. By an inquiry into histology as to how the nerves pierce the basement mucous membrane, it will be found that it is very much like the fingers of the hand when inserted in a glove. In hay fever patients' nares that are normal in appearance, it is possible that there is an abnormal distribution of nerves to these areas, and that there are really more nerve filaments present than normal, and hence more sensitiveness. In those cases where there are enchondroses and exostoses there may be a thinning of the mucous membrane covering these growths, and hence the nerves are more superficial and therefore more sensitive.

In those cases attended by hypertrophic rhinitis or a polypoid condition of the turbinate, it is possible that the mucous membrane has

become thinned from not only the extra amount of surface that it is required to cover but also from the constant rubbing together which must inevitably follow this condition. These possibilities are suggested as explaining how these areas may be produced in the nares, but do not affirm that any or all of them may be the cause.

The third condition essential for hay fever is a nervous temperament, a hyperesthesia of the nerve-centers, or as some prefer to style it, a neurotic diathesis. Remove any one of these three essentials and you will have no hay fever. Isolate the hay fever sufferer from the excitant, whatever it may be; destroy the sensitive areas when possible, or sedate the hypersensitive nerve-centers, and your patient is happy so far as hay fever is concerned. This nervous temperament may be inherited or follow some prolonged and severe nervous strain or illness. It may be exhibited in other members of the family in other functional nervous troubles than hay fever, but it is no uncommon history to find that more than one member of the family suffers from hay fever.

Hay fever is closely associated with asthma, if not due to the same etiological factors; one being a vaso-motor trouble located in the nares, and the other in bronchioles. Hay fever is frequently complicated with asthma, and again hay fever may fail to make its annual appearance, but asthma comes instead.

Bishop records the fact that microscopists have gone far to establish their common etiological origin by examining the secretions from the nares and bronchioles during attacks of these troubles, and have found a substance common to both, which they have termed "gravel," and it has been suggested that this substance acts as a foreign body and excites the attacks. Bosworth thinks hay fever and asthma to be pathologically identical.

It is difficult for those who hold to the pollen theory as almost the exclusive cause of hay fever to reconcile the annual return to the very day with this theory, for every one knows that with our variety of moisture and climate that there must be a difference in the dates of years when the pollen is given off, yet hay fever returns annually with almost as much regularity as the ticking of a clock, to afflict her sufferers.

In this connection it will be interesting as well as profitable for me to mention that Mackenzie produced an attack of hay fever in a hay fever subject by showing him an artificial rose, and other persons have been known to have an attack by merely gazing on a picture of new-mown hay.

Price-Brown relates a case of a man suffering from hay fever where he would saturate several handkerchiefs before he would get relief from the attack, and would then retire for the night feeling perfectly comfortable. The weather being warm, he could stand only a sheet over him. This man has learned from experience that as long as he lies on his back and keeps his arms, body, and lower limbs covered with this sheet that he will feel comfortable, and can sleep for hours before another attack returns, but let him remove a hand or foot from beneath his sheet and an attack will come on, causing him to saturate two or three handkerchiefs before he gets relief.

He mentions another case where the man suffers about a month each year, beginning in August, and the attacks come on at night, yet this man can go daily to a public garden filled with flowers and other kind of verdure and read without the least feeling of discomfort.

Now, what has the pollen, the odor from feathers or horses, or any other generally supposed excitant of hay fever, to do in producing the attacks in these cases? I think nothing; absolutely nothing!

I do not mention these instances to deprecate the amount that pollen or any other excitant that you may fancy is the cause of hay fever, for doubtless there are many cases where there can be no doubt that they are the excitants, but I do wish to be understood as contending that often the excitant lies within instead of without the system, the proper removal of which would prevent the attack of hay fever.

Bishop has suggested that hay fever is a misnomer, and that the trouble would be more scientifically called nervous nasal catarrh, for it is the nervous element that figures predominantly in this trouble, and should have our consideration.

We have a nervous intestinal catarrh that comes and goes as suddenly as hay fever or asthma. Public speakers have been known to suffer from a severe attack of diarrhea just previous to the time for them to make their address, and after they had finished their address the diarrhea would disappear, only to return again under similar circumstances. There is such a thing as nervous dyspepsia. Irritating the posterior wall of the external auditory canal produces coughing; faulty digestion produces urticaria; worms in children produce a congestion of the turbinal tissue, and is unconsciously manifested by the child rubbing and picking its nose; itching over the entire body may be due to morbid condition of ovaries, uterus, or liver, and so it is not out of the trend of medical views to hold that asthma and hay fever are func-

tional disturbances of the nervous system under certain conditions. The nerve-supply to the nares is favorable for these reflex troubles. The mucous membrane of the nares is supplied by nerves from the spheno-palatine or Meckel's ganglion, and this ganglion is made up by three roots, viz., a sensory root, from the superior maxillary or second division of the fifth nerve, the motor root, from the facial, and the sympathetic, from the carotid plexus.

Now, when you recall the distribution of the pneumogastric and its close connection with the facial through the auricular branch, and with the glosso-pharyngeal through connecting branches, is it anything strange that we have reflex troubles either in the nares or bronchioles? The prevailing opinion that asthma can be produced from a local nasal condition as well as hay fever is a point in favor of these troubles being of a reflex nature and due to the same etiological factors.

While the history of heredity is not positive proof that hay fever and asthma are of nervous origin, when we take into consideration the annual return and the variety of ways that an attack can be produced the conclusion seems certain. Some have suggested that hay fever may be a germ disease, but I can see no reason why it should be considered so any more than asthma, hysteria, or epilepsy.

Bishop and Tyndel, each one independent of the other, after studying hay fever, came to the conclusion that it was due to the uric acid in the blood. Uric acid exists in the blood in the proportion of about one to thirty-five or forty of urea in health, and when this "proportion is increased certain symptoms of a neurotic and vaso-motor character develop." Quinquad, according to Bishop, "studied the effect of uric acid on the skin by giving uric acid in three to six grains per day to a human being, and observed that boils and eczema developed."

Now, the mucous membrane is the continuation of the skin, more delicate in structure and more richly supplied with nerves, and what is more analogous to a nasal coryza than a weeping eczema? The American Text-Book on Skin Diseases is my authority for stating that gouty and rheumatic people furnish a large number of the cases of urticaria. Notice how similar are several of the symptoms of hay fever and urticaria. Both come on suddenly; there is a congestion of the parts involved, accompanied with nervous manifestations.

Osler, in writing on gout, says that in from 50 to 60 per cent of all cases the disease existed in parent or grandparent; it rarely develops before thirteen years of age, but in cases of strong hereditary tendency

it has been known to develop before puberty, and that it is more common in males than in females.

Recall the quotation I made from Kyle about the history of hay fever and see how it agrees with this from Osler in regard to gout. Osler, Anders, and the American Text-Book on Practice give among their lists of symptoms uric acid diathesis, eczema, migraine, despondency, etc.

Alexander Haig was a sufferer from migraine, and he observed that when an attack came on that the uric acid increased in proportion to one to twenty or twenty-five of urea, while previous it was one to thirty-five or forty. He thinks that headache from uric acid is produced by it exciting a vaso-motor contraction of the arterioles of the brain, causing an anemia.

Now, if this is the physiological effect of uric acid, there will be a congestion somewhere else in the system, and where more likely than in the vascular erectile turbinal tissue? With this condition, together with your sensitive areas and your neurotic diathesis, how easy is it for most anything, as dust, odors, obnoxious gases, or unmoist air to excite a "uric acid storm" in the form of hay fever!

Haig also claims that there is an increase in the secretion of uric acid during the warmer months, and hence more in the blood, and this accounts for the fact that hay fever is more common in summer, and why it may appear in winter without assuming that the sufferer must have come in contact with some garment that was put away during the summer, impregnated with pollen.

It is a physiological fact that the blood is more alkaline during the period of repose and in the early morning, and as the person takes exercise the alkalinity decreases. The more alkaline the blood, the more uric acid it will carry, and this explains why hay fever comes on during the night and early morning, and the sufferer gets some relief during the day after taking exercise.

If Ebstein is correct, that the uric acid salts act as exciters of inflammation, we can easily understand how the chilling of the body, by checking the secretion of the skin, which is acid in reaction, will have a tendency to lessen the alkalinity of the blood, and uric acid salts will be deposited and produce rheumatism, gout, tonsillitis, rhinitis, etc.

Leflaine analyzed the urine of some patients previous to an attack of hay fever and found uric acid greatly in excess of its normal ratio to urea.

Bishop gives "Joal's report of one hundred and twenty-seven cases of hay fever, and out of this number there was a family history pointing to uric acid diathesis in one hundred and seven cases, and in sixty-seven of the seventy-one adult patients the diathesis was marked. There was neurasthenia in one hundred and one of the one hundred and twenty-seven cases, and in forty-two of the one hundred and seven the nasal mucous membrane appeared to be normal."

Bishop succeeded in producing and controlling hay fever by diet and treatment the same as migraine or other conditions arising from uric acid diathesis. He gave an acid, and thus lessened the alkalinity of the blood and cleared it of uric acid and controlled the attack. He then gave an alkali and neutralized the effect of the acid and excited the attack, thus proving the etiology of the trouble.

It is a noticeable fact that the drugs which have some reputation in the treatment of hay fever, as opium, bromide of quinine, blennostasine, antipyrine, etc., are drugs that while they are nerve sedatives are also drugs that decrease the formation of uric acid, and no doubt some of their good effect is due to this fact. This is especially true of antipyrine, which not only decreases the formation of uric acid but also by chemical action aids in the elimination of that already formed. While no one holds that all cases of hay fever are due to the uric acid diathesis, I am satisfied that they are often associated, and the proper treatment of this diathesis would prevent the attack.

Treatment. Examine the nares and see if any sensitive areas or pathological condition in the way of spurs or polyps can be found, and if so they should be removed or destroyed. In that class of cases where you can not discover the sensitive areas, but have found out the excitant of the attack, be it pollen, feathers, ammonia, or what not, isolate the patient from the excitant. Of the different localities where these patients are said to enjoy the greatest freedom from attacks, probably the White and Adirondacks Mountains or a sea voyage have the greatest reputation.

Ingals, basing his treatment on the pollen theory and the ragweed and golden-rod as the most common excitants, has suggested the immunizing of the sufferer by giving these drugs. He makes a report on eighteen cases (see *Journal of American Medical Association*, June 28th of this year). "Of the twelve patients who believed themselves benefited by the remedy, three, or 25 per cent, attributed the attacks to ragweed, none to golden-rod, and nine, or 75 per cent, to other things, as car smoke, odor of flowers and weeds, night air, dusty weather, dust

from grain and new-mown hay. Of the patients who experienced no relief, three, or 50 per cent, attributed the attacks to ragweed, two, or 33 per cent, to golden-rod, and one, or 17 per cent, to other things, such as damp, warm, or cloudy weather."

Now, with all due respect to Dr. Ingals, "whose shoe-latchets I am not worthy to unlace," I must say that this report is anything but gratifying from the immunizing standpoint. Furthermore, when we study the effect of these drugs we find that they produced diaphoresis, and this effect alone may be sufficient to explain their beneficial effects if we will assume other etiological factors. He promises further investigation of these remedies, and we wait his report with the greatest anxiety.

To that class of patients where the cause is the uric acid, the treatment resolves itself into eliminating the uric acid from the system before the time for the attack. These patients should be urged to drink a large quantity of water, for as a rule they do not drink the proper amount.

This is the main factor for good that comes from the springs that are famous for the treatment of this diathesis, for the amount of uric acid solvent that they receive from the water imbibed is limited. Their diets should be regulated, avoiding sweets, starches, wine, beer, and meats. Let them live principally on vegetables, fruits, milk, and fish. Insist on them taking the proper amount of exercise, and that to the extent of exciting free perspiration, for uric acid is rapidly eliminated through the sudoriferous glands.

If they will not take the proper amount of exercise, I know of nothing better than to prescribe an occasional Turkish bath. From six to eight weeks previous to the time for the attack, put them on anti-uric acid treatment, and lithia in some form is the best. Alkalithia and citrate of lithia are good.

Wyeth prepares a granular effervescing phospho-lithia, a laxative salt of lithia, that is doubly indicated in this condition.

This is a remedy similar in effects to thalion, prepared by the Vass Chemical Company, which has considerable reputation as a uric acid solvent.

Examinations of urine should be made from time to time to see the relative amount of uric acid to urea, and to find out if the proper amount is being excreted and not stored up in the system. As long as we give lithia preparations and observe instructions in regard to diet and exercise, and the uric acid remains in a normal ratio to urea, we need not have much fear of our patient having hay fever.

During the period for the attack, opposite views are taken as to the proper method of treatment. Some hold (and I think correctly) that the alkaline treatment should be continued and uric acid kept out of the system, and that this is the safest way to prevent an attack, while others hold that during this time an acid should be given and the uric acid kept out of the blood and deposited in the tissues. While this is theoretically true, and an impending attack can be aborted by giving an acid and thus freeing the blood of the excitant, still the acid treatment continued for a few weeks has a tendency to accumulate uric acid in the system and thus finally to excite the very condition that we are trying to prevent. The acid treatment, then, I feel should be held in reserve only to free the blood on the approach of an attack, and then to be followed by the rapid eliminative treatment to free the system of the excitant. In case an acid is used, dilute sulphuric acid twenty to thirty drops is good, but tends to produce diarrhea.

Bishop prefers Horsford's acid phosphate, one to two drachms, when he uses an acid, as in this he gets a nervine, which is always indicated in this condition.

Gleason is partial to fresh concentrated nitro-muriatic acid, in three to five drops, claiming that it limits the formation of uric acid. In making a report on this treatment, which he had used for three years, he found only one case in which it did not give some relief.

During the hay fever season the nares should be sprayed three or four times a day with an oily sedative, and of these menthol in aboline is probably the best. Should an attack come on, nothing can be done for the coryza better than to give a tablet composed of morphia $\frac{1}{4}$ grain and atropine $\frac{1}{60}$, as is needed. To give immediate but temporary relief, cocaine in two- to four-per-cent solution, or adrenalin can be applied to the turgescient nares. The effect of these drugs is that of a vaso-motor contractor when applied locally, and has no effect looking toward relieving the trouble longer than their effect lasts. Each of these drugs has a tendency to lose their effect when continuously used, and then are powerless for good in case they should be needed. They can not, therefore, be recommended as a routine treatment, but held in reserve as emergency remedies.

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THE WORLD'S FAIR, THE PLAGUE, AND SMALLPOX.

With the plague in San Francisco and at Mazatlan on the Mexican border, and smallpox generally distributed all over this country and its contiguous territory, it behooves the health officers and the commercial public to take radical measures to stamp out these two loathsome and highly infectious diseases.

It is imperative that something radical be done at once, for there is no use denying the fact that the possibility of the United States becoming infected with the plague at many points is very evident. The commercial men of this country should be the most active to insist on positive measures for the prevention and eradication of the plague, as a plague-stricken city is bound to be handicapped from a commercial standpoint. The judiciary of this country has much to do in the enforcement of the sanitary laws, and no judge should hesitate for a single moment to act promptly. Suppose that he does make a mistake in having certain measures enforced and it turns out that there was really no need for such action, there would be little or no harm done save an expenditure of public money unnecessarily, which is not an unpardonable crime when it is done with a good intention.

The example set by many manufacturers and employers of labor in making vaccination a compulsory thing with their employes is one

that should be enforced by everybody, from the man who employs a single domestic up to those that employ thousands. In this way the great mass of people about the cities and factories would become immune, and this would do much to check the disease. Vaccination should be insisted upon by the doctors all over this broad land. They should let their clients know that they do not care to treat them when they become affected with smallpox, and explain to them that in many instances they can not treat them because they will be sent to special hospitals erected for the treatment of the disease. This of itself would doubtless cause many persons to readily consent to vaccination who would not do so under other circumstances.

Current Surgical and Medical Selections.

THE GOVERNMENT MEDICAL SERVICES.—The incident serves as an excellent argument for putting all the medical departments of the government services on an equal basis as regards rank, promotion, pay, and allowances, and making the latter sufficiently generous to constantly attract to the government services the best medical talent that the United States affords. The medical profession, by united action, has it in its power to do this, and to prevent the passage of unwise legislation affecting its representatives, such as that by which the efficiency of the medical department of the army has been lately crippled. There is not a medical department under the government which does not need—and is not worthy of—the support of the profession in the attainment of necessary reforms.—*Medical Record*.

OVERFEEDING AND CANCER.—Josiah Oldfield, in correspondence with the British Medical Journal, adds further testimony to his conviction, expressed in a paper read before the British Medical Association at Ipswich, that the overfeeding of animals and the retention in their tissues of the decomposition products make the eating of such animals as food productive of an unstable cell equilibrium which foreruns the cancer incidence, and that the same thing applies to vegetables, though in a lesser degree. During his late tour through India he found cancer practically absent from all those areas where vegetation was sparse and where the animals used for food had lived a hardy existence, and in those regions marked by ranker vegetation and where the animals were more highly foddered it was more prevalent.—*American Medicine*.

PARASITES AS A CAUSE OF APPENDICITIS.—Von Moty, in a communication made to the *Echo Medical du Nord* (1902, p. 217), states that in three out of five cases of appendicitis occurring in his own practice he found the oxyuris either in the appendix or in the intestine. The presence of this or of some other parasite in this disease is so frequent that it can hardly be regarded as accidental, and he therefore draws the conclusion that the parasites which have been observed, as the trichocephalus dispar, oxyuris, and ascaris play an active part in the production of the disease. Ascarides seem to be associated with gangrenous inflammation, while the trichocephalus or the oxyuris leads to chronic appendicitis. Those cases which occur in women in childbed and are of a mild character are amendable to medicine, to the removal of the parasites, and to the regulation of the general health. He has found the administration of thirty or sixty grains of bismuth subnitrate taken in *eau sucrée* in small quantities at intervals in the course of the day of much service in relieving the cramps that so often accompany the disease.—*The Lancet*.

A DOCTORLESS AND DRUGLESS EARTHLY PARADISE.—Millionaire Elijah Dowie is making great progress with his Zion City, forty-two miles north of Chicago. The Chicago city assessors refused to let his several millions of dollars' worth of property go free of taxes, so the modern Elijah has run away from them where only State taxation will bother him. The millions, it is said, that he will make by the new "real estate deal" are sufficiently numerous to make a European capitalist envious. Among the conditions of a lease of his land in Zion City are that no person shall sell liquors, tobacco, oysters, or drugs, nor shall any one living thereon practice medicine, surgery, or dentistry. The believer in medicine may call in a physician from the outside, and may use drugs if he buys them on the outside. We wonder if the oyster may also be bought outside and eaten upon the grounds or not, and why this poor innocent is classed with immoral doctors and dentists and pharmacists. What are "drugs" is a question Dowie may have to decide in the courts; shall mineral and spring water, decoctions of berries, etc., be held as drugs or as food? Is the bark of one tree food and another a vile drug? Is trimming one's nails or cutting the hair neither sinful nor surgical, while wearing filled teeth and spectacles, or setting a dislocated finger, or stopping a hemorrhage, are both medical and immoral? The antimetrical crank is a strange product of the times.—*American Medicine*.

A MODEL TOWN.—Wiesbaden, brought into prominence by the German Medical Congress holding its recent annual meeting there, presents conditions worthy of imitation. The streets, which are all asphalted or paved with wood, are well flushed with water and swept after midnight, and by this means dust and refuse are effectually prevented, and in consequence the buildings retain their snow-white appearance, the air its purity, the foliage of the trees its freshness.—*Ibid*.

INFLUENCE OF ALCOHOL ON THE SYSTEM.—The *Berliner Klinische Wochenschrift* of September 29th contains a paper read by Dr. Arthur Clopatt, of Helsingfors, at a recent meeting of the Congress of Finland Physicians in that town, upon the Action of Alcohol on the Metabolism of Man. The older authorities, such as Tiedemann, Gmelin, and Lallemand, thought that alcohol was excreted unburnt from the economy. Later experiments, however, like Anstie, Binz, and Strassmann, have shown that it is to a certain extent destroyed in the body by oxidation. Dr. Clopatt has made a series of experiments upon the effects of the use of alcohol upon the weight of the body, and the results at which he has arrived are, first, that alcohol, when the system has become accustomed to it, supplies the place of both nitrogenous and non-nitrogenous food by rendering a less amount necessary, and secondly, that alcohol has no demonstrable action in promoting the absorption of food from the intestines.—*The Lancet*.

A SIMPLE ANTISEPTIC DRESSING.—Camphor and carbolic acid (crystals), triturated together until liquefied—equal parts are probably taken—forms, according to Dr. E. L. Sharpe, the simplest and most effective antiseptic dressing with which he is familiar. It forms a clear, heavy, oily liquid, with an aromatic camphoraceous odor; it is bland, not toxic [?], and outside of a momentary stinging, non-irritating; on the contrary, it is quite a local anesthetic. It is the only antiseptic which he uses on his own hands and on the surface of the body to be operated upon. The eye is the only organ of the body to which the dressing is unsuitable.

For after-dressings he uses camphorphenol diluted with three to six parts of olive oil. Thus diluted, the author found it very soothing in burns and a stimulant of granulations. It is also a good local application in eczema, erysipelas, etc. Several serious operations are reported in which this combination proved highly satisfactory as an antiseptic.—*Therapeutic Gazette*.

ANTIVACCINATION HOSPITALS are urged by an Englishman, who volunteers to subscribe \$25 and to raise \$500 toward founding one. Our esteemed contemporary, the Medical Press, calls attention to the fact that such a hospital already exists, the Hospital of St. Francis, in London, with a branch in Essex. The Press also states that qualified practitioners are on the staff, and that the contention of the chairman of the hospital that diet can take the place of vaccination will hardly pass muster professionally. The hospital's work in this method of supplanting vaccination does not seem to have aroused much attention. We do not understand why. Every anti should subscribe to its funds and support it *vi et armis*. It is the best way in the world to convince the doubtful. St. Francis seems to be still more interested in antivenesection and in vegetarianism. By all means add these and other similar desiderata. It would be well for the American antis to establish such a hospital and to make Dr. Pfeiffer the manager. In analogy with his own journal, it might appropriately be called "The Cranky Notions Department" or institution.—*American Medicine*.

THE ACTION OF DIGITOXIN.—Dr. F. Curioni instituted experiments with digitoxin (Merck) at the Turin Medical Clinic, and he reports the following results: In cases of pronounced cardiac insufficiency digitoxin produces not only an improvement in the pulse, but also an increase in the arterial blood pressure. The maximum effect becomes apparent four to five hours after the administration. In reference to the dosage the individual tolerance must first be ascertained, and it is therefore best to commence with $\frac{1}{120}$ grn. ($\frac{1}{2}$ milligram). Such doses remove the dirotism, make the pulse full and strong, and prolong the diastole. Doses of $\frac{1}{80}$ grn. also raise the blood pressure. In severe, chronic disease of the heart muscle, where drug habituation usually exists, doses of $\frac{1}{60}$ grn. may be used with good effect. The advantages which digitoxin possesses over digitalis are its greater efficiency and greater promptitude of action.—*Therapeutic Gazette.*

SECRET AND IGNORED VACCINATION.—The growing conviction on the part of the antivaccinationists that their cause is hopeless, combined with the increasing pressure of public opinion, is producing a peculiar state of mind and more peculiar practices upon their part. The actual result is that they continue to preach the anti dogmatism, but secretly practice vaccination. This at first comes about by a supercilious scorn of vaccination (similar to the lofty contempt of Eddyites for the contagiousness of contagious diseases, while humoring the law that requires reporting such cases) and a large-minded tolerance for the poor stupid folk who persist in ignorance and error. To satisfy such people they consent to vaccination. Then when they do not get smallpox they forget that they have been immunized, and claim that their freedom from the disease is due to their faith or to their natural immunity. Dr. Pfeiffer erred in a too thoroughgoing sincerity. It is undoubtedly true that this absurd condition of mind exists in a large number of semi-civilized antis. Among semi-savage antis it is well known. In his last report Lord Cromer tells of the success in vaccinating the Egyptian natives upon the condition of secrecy. The Bisharin Arabs “present themselves readily for vaccination, provided their names are not entered upon the register.”—*American Medicine.*

DEATHS FROM SPINAL COCAINIZATION.—M. F. Legue, *Presse Medicale*, reports two immediate deaths from spinal cocaineization. He believes cerebral congestion, arterio-sclerosis, and severe renal lesion as contra-indications to the use of cocaine by the intra-arachnoid method.—*The Fort Wayne Medical Journal-Magazine.*

COMPULSORY VACCINATION OF RAILROAD EMPLOYEES.—The general manager of the Boston & Maine Railroad has issued an order to the effect that the twenty-five thousand employes of the road must be vaccinated. The company employs physicians to vaccinate the employes without charge, but those who prefer may be vaccinated elsewhere and present a certificate to the railroad company testifying to their successful vaccination.—*Ibid.*

LIBRARIES THAT DO GOOD.—There are a hundred ways in which money could be given for libraries where it would be of far more benefit and much better appreciated than in the stereotyped way of fashion. One such is indicated by the following excerpt from a paper by Warden W. A. Hunter, of Anamosa, Iowa:

“Another factor contributing to the happiness of unfortunates is the establishment of libraries of carefully selected works of fiction, history, biography, science, literature, etc., giving a means of pastime, recreation, and instruction, and likewise showing a healthy condition of public sentiment in whatever contributes to the amelioration of the conditions surrounding public wards. As an indication that this is appreciated it is but necessary to state that the library at the penitentiary at Anamosa last year issued 29,246 books, almost as many as the Cedar Rapids Public Library, which circulated 33,939 for the same period in a city of 25,000 inhabitants, against a prison population of 500.”—*American Medicine*.

Special Notices.

THE usefulness of good Hypophosphites in pulmonary and strumous affections is generally agreed upon by the profession.

We commend to the notice of our readers the advertisement on third cover page of this number. “ROBINSON'S HYPOPHOSPHITES,” also “ROBINSON'S HYPOPHOSPHITES WITH WILD CHERRY BARK” (this is a new combination and will be found very valuable), are elegant and uniformly active preparations, the presence in them of quinine, strychnine, iron, etc., adding highly to their tonic value.

FOR the convenience of physicians Messrs. H. Planten & Son, the well-known capsule manufacturers of New York, have just issued a list, with detailed formulas, of capsules and “perloids” of sandal oil and its various combinations, which is so full of valuable hints to the profession that we suggest you write for a copy. It is one of the most instructive price lists we have yet seen of this class of pharmaceuticals. Address your request to Messrs. H. Planten & Son, 224 William Street, New York, and mention this journal.

THE AMERICAN PRACTITIONER AND NEWS.

"NEC TENUI PENNÂ."

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NO. 12.

Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than any thing else.—RUSKIN.

Original Articles.

THE MOST PRACTICABLE ORGANIZATION FOR THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN ACTIVE SERVICE.*

BY THOMAS PAGE GRANT, M. D.

Late Captain and Assistant Surgeon, K. S. G., of Louisville, Ky.

[CONCLUDED FROM LAST ISSUE.]

In addition to the one wagon which it should have to carry the medicines and other stores, there should be at least two ambulances attached to each intermediate hospital. If it should become necessary for a field hospital to move before it is evacuated, the intermediate hospital shall move up and take charge of the wounded that may be in the field hospital, and proceed to remove them to the rear, the same as if it were a field hospital.

Attached to every division there should be a base or general hospital, which should be equipped to accommodate not less than four hundred sick and wounded. This number will not be found excessive in the first weeks of a campaign, before the men have become seasoned, and the less if they have succumbed to the new conditions surrounding them. Nor will it be found too large when the real duties of war shall be on and serious battles fought. And indeed it is possible that the demands may be for even larger accommodations. Its personnel should be staff organization for a base hospital of four to six hundred beds.

*Submitted to the Association of Military Surgeons of the United States in competition for the Eno Sanders Prize, 1902.

EXECUTIVE STAFF.

One medical inspector, as commandant; one hospital staff corps officer (captain), as assistant to commandant, who shall be executive officer, with duties analogous to those of a battalion adjutant. He shall be a summary court. He shall have charge of the preparation and correction of certificates of disability, the admission and discharge of patients, the records of the hospital, and the verification of the accounts; one chief hospital steward, as chief clerk, with duties analogous to those of a battalion sergeant-major; one hospital steward, first class, as registrar, having charge of all records and other papers, seeing that they take the proper course and are properly disposed of; one hospital steward, second class, as assistant registrar; one non-commissioned officer as provost sergeant, either a hospital corps or line non-commissioned officer will answer; six to ten privates, hospital corps, as clerks, messengers, orderlies, etc.

QUARTERMASTER AND COMMISSARY DEPARTMENT.

One hospital staff corps officer (first lieutenant), as quartermaster and commissary. If no hospital staff corps officer is available a line or staff officer will have to be substituted; one non-commissioned officer, either hospital corps or hospital staff corps, as quartermaster-sergeant; one non-commissioned officer, either hospital corps or hospital staff corps, as commissary sergeant; four to six privates, hospital corps, as clerks and helpers.

MEDICAL STORES AND DISPENSING DEPARTMENT.

One hospital staff corps officer (second lieutenant) in charge of the drug-room and the medical and surgical supplies. He will also supervise the compounding of prescriptions, etc.; four hospital stewards, as dispensing clerks, clerks, etc.; four to six privates, hospital corps, as clerks, messengers, etc.

MEDICAL AND SURGICAL STAFF.

One medical officer, surgeon lieutenant-colonel (or major), as chief of operating and visiting staff; seven to eight medical officers, surgeons, majors, captains, lieutenants, and acting assistant sur-

geons, as operating and attending staff, pathologist, etc.; from these there shall be a medical officer of the day detailed every day; two non-commissioned officers, first class, hospital corps, as chief ward masters, day and night; one or two non-commissioned officers, hospital corps, in charge of operating room; six to ten non-commissioned officers, hospital corps, as ward masters, in charge of kitchen, dining-rooms, etc.; sixty-five to eighty privates, hospital corps, as nurses, cooks, messengers, etc.; ten to fifteen privates or hired laborers. If women nurses are employed they should take rank after the privates of the hospital corps.

When a division (corps or brigade) is camped together the regimental medical officers will be expected to do tours of duty in the division or general hospital. These tours will be fixed by the chief surgeon of the division.

In the foregoing statement of the personnel needed for the operation of a base hospital, the smaller numbers are for a hospital of approximately four hundred beds, and the personnel to be increased as the number of beds is increased. The same staff allowances should be made for general and recovery hospitals away from the seat of war as are made for base hospitals.

Whenever it is thought wise to increase the accommodations above six hundred, then there should be added to the staff one hospital staff corps officer (second lieutenant) as registrar, to have entire charge (having a suitable number of clerks from the hospital corps under him) of the records of the hospital; one hospital staff corps officer (first lieutenant) as commissary; and one additional medical officer to every forty beds added; and a nurse to every six beds added. It is doubtful if it is best to have over eight hundred beds in any hospital, and six hundred is better. But if for any reason it is thought best to have a larger number located at any given point, it would be better to have the station organized into separate hospitals of about six to eight hundred beds, and have the whole under the command of a surgeon-colonel or a general or field officer of the line, who will be responsible for the discipline and military conduct of the station.

In addition to the usual supply of instruments allotted to a hospital, every hospital should have a photographic outfit, as hereinbefore suggested.

HOSPITAL TRAINS AND TRANSPORTS.

Of necessity the base hospitals will have to be evacuated as rapidly as the condition of inmates will permit; those whose wounds and ailments are such as to demand a prolonged course of treatment will have to be sent to a general hospital at some distance from the seat of war, and the invalids from the tropical possessions will have to be brought home. To handle these men will require both hospital ships and trains. Of the personnel of these it is difficult to make a definite allowance, as that will have to be largely governed by the number of invalids and the distance to be traveled. Where a train is to carry its load of sick and invalids for twenty-four hours or more, it will require a much stronger detail than where the trip is only for a few hours. Assuming that the train will travel for twenty-four hours or more, carrying a load of one hundred sick and invalids, the personnel should be two medical officers—one surgeon-captain, one surgeon-lieutenant; one officer hospital staff corps (second lieutenant) as quartermaster; two non-commissioned officers, hospital corps, hospital stewards; one non-commissioned officer, hospital staff corps, as quartermaster-sergeant; twenty privates, hospital corps, as nurses and attendants.

The rations will have to be prepared before starting on the journey, or else procured from the way stations. The train should consist of five passenger or sleeping cars and one empty baggage car or passenger car, from which the seats have been removed, to serve as store car and operating-room in case it should become necessary to perform an operation in transit. This number of officers could care for even one hundred and fifty men, but any increase over that number would require an additional medical officer for every fifty or seventy-five patients, and there should be an additional hospital steward for every thirty patients above one hundred, and a nurse for every additional fifteen patients. The increased car allowance should be a car for every twenty additional patients. Where the run is shorter it will require fewer men to man the train, for the reason that there will not have to be a relief detail.

HOSPITAL SHIPS.

The hospital ships should be arranged to accommodate about two hundred and fifty or three hundred patients and invalids besides the crew and hospital detail. The navigation will probably be under the control of the quartermaster's department, although it would be far better if this too were directly under the charge of the medical department. Of the navigating department of a ship, we, as military surgeons, have nothing to do, so the personnel of that department will not be considered.

The hospital personnel should be, for a hospital ship carrying two hundred and fifty to three hundred cases, four medical officers: one surgeon lieutenant-colonel (or major) in charge; two surgeon-captains; one surgeon-lieutenant; one commissioned officer, hospital staff corps, as registrar and supply officer; five non-commissioned officers, hospital corps—two hospital stewards, first class, three hospital stewards, second class; forty-eight privates, hospital corps—thirty-five nurses, five officers' orderlies, eight extra men. The cooks are to be provided by the ship as a part of its crew; when this is not the case, then there must be six privates, hospital staff corps (or hospital corps), as cooks.

The hospital ship should be equipped as a first-class hospital, with instruments, operating-room, baths, drug-room, X-ray outfit, etc.

SANITARY ADMINISTRATION ON THE LINE OF COMMUNICATION.

The chief surgeons of corps, divisions, and brigade surgeon-majors should be especially charged with seeing that there is no congestion of the sick at any point between the battlefield and the general hospital, and, if necessary, they shall call to their assistance such other officers of the medical department, either medical or hospital staff corps officers, as will procure the prompt evacuation of all hospitals at the front and the safe transportation of the cases to the general hospital.

There will be times when it will be necessary to organize pest or plague hospitals, but these should be operated with just as small a personnel as the circumstances of the case will permit, and their organization is not considered as a part of this plan, as that is a condition that must be met at the time of its occurrence.

Personnel of the Medical Department of an Army Corps.	Surgeon-colonels.	Medical Inspectors.	Surgeon Lieut.-cols.	Surgeon-majors.	Surgeon-captains.	Surgeon-lieuts.	Captains, H. S. C.	1st Lieut., H. S. C.	2d Lieut., H. S. C.	Chief Hosp. Stewards.	Hospital Stewards, 1st class.	Hospital Stewards, 2d class.	Privates, H. C.	Non-com. Officers, H. S. C.	Drivers.	Privates, H. S. C.	Musicians.	Artificers.
Headquarters Corps, . .	1	1		2	1		1			1	1		3					
" Division, . .			3	9	3					3			3					
" Brigade, . .											9		9					
Regimental,				27	27	27					27	54	135					
Batteries,					9	9							600					
Ambulance Corps,				4	12	20		4	8		48	72	18	36	156	20	24	8
Hospital, Field,				9	9	9			9		18	18	225	36	90	117	2	
" Intermediate, {																		
" Base,		3	3	9	9	9	3	3	3	9	9	123	3	3	227			
" General,		1	1	3	3	2	1	1	1	1	21	207	102	3	15	30		
Supply Depots,							1	3		4	4	4	4	20	20	12		
Hospital Shlps,			1		2	1		1			2	3	48			6		
" Trains,					1	1			1		1	1	20	1				

Transportation for Medical Department of an Army Corps.	Ambulances.	Water Carts.	Medicine Wagons.	Wagons, baggage.	Forges.	Mules.	Horses.
Regimental,		27	27	27		195	162
Batteries,	9					18	18
Ambulance Corps,	108	12	12	36	4	396	108
Field Hospitals,		18	18	81		360	72
Intermediate Hospitals, . .	18		9	9		354	
Supply Depots,				20		81	60
Administration,						80	12
							21

LOUISVILLE.

PSYCHOLOGY AS AN ADJUNCT IN THE TREATMENT OF DISEASE.*

BY L. J. JONES, M. D.

It may, in the opinion of some of our allopathic colleagues, be verging on lines of the irregular, or downright heresy, to connect with our well-credited allopathic philosophy any one of the many modern Schools of the Healing Art (and they are innumerable, mostly fakes and charlatanistic, both in theory and practice), but it must be conceded by all who have investigated unbiased, unprejudiced, and with the purpose of seeking truth, that the scholarly minds that advocate and teach psychotherapeutics in many of our higher universities,

* Read before the Southern Kentucky Medical Association, Adairville, Ky., April, 1902.

both in this and foreign countries, at least should demand our solicitous and honest investigation.

It is claimed that the therapeutic application of psychology, or psychic phenomena, as advocated by such brilliant minds as Hudson, Tucker, Burnheim, and others of equal note, is one of the greatest evidences of the advanced era in medicine and surgery. Not until the last few years has this comparatively new philosophy made such headway among the intelligent and inquiring minds of our profession, as well as other scientists.

It seems that the name of "Suggestive Therapeutics" is the title applied to the *modus operandi* of its wondrous claims. Then what is Suggestive Therapeutics, or how administered for relief?

To begin at the beginning, its accredited advocates lay down this fundamental principle, that is, Hudson starts off with this hypothesis: "Man has two minds, and designates them the objective and the subjective mind. The objective takes cognizance of the objective world, is man's guide to his struggle with his material environment: its highest function is that of reasoning. The subjective perceives by intuition, is the seat of the emotions and the storehouse of memory."

And he says the subjective mind is always amenable to suggestion from the objective mind. It is claimed that the subjective mind, or as Herbert Spencer puts it, "the infinite and eternal energy" has exclusive control of all our involuntary organs, both while asleep and when awake, such as the lungs, heart, liver, kidneys, uterus, and all other involuntary organs of the body. Therefore if it is true that the subjective mind or life principle is amenable to suggestion from the objective, material, or reasoning mind, it naturally follows that we can use suggestion to control or alleviate diseases of those organs which it governs. That is "Suggestive Therapeutics" as I understand it. It can not be denied by any one who has investigated this science and the claims of its advocates that honest hypnotism is a reality, and that surgical operations of some magnitude have been and are daily performed without the least pain under its wonderful anesthetic influence. The effect of mind on the bodily structure, both in health and disease, is too well known by all intelligent observers to make it necessary here to elaborate at any length to prove the fact. We see it in every-day practice. We give placeboes with the view of beneficent results as

surely often as we look for a purge after administering an infallible cathartic.

Müller makes this observation: "It may be stated as a general fact that any state of the body which is conceived to be approaching, and which is expected with certain confidence, the certainty of its occurrence will be very prone to ensue as the very result of that idea, if it be not beyond the bounds of possibility."

And Tucker makes these observations: "When a person, on swallowing a bread-pill in the belief that it possesses aperient properties, is purged, it is said to be through the definite direction of thought to the intestinal canal, such leading idea exciting the same peristaltic action as would have been induced by castor oil. In such cases the fixed idea is that certain phenomena will occur."

We all know that vomiting can be brought about by the belief that an emetic has been taken. As germane to the subject the immortal bard says in his "Winter's Tale": "There may be in the cup a spider steeped, and one may drink, depart, and yet partake no venom, for his knowledge is not infected: but if one present the abhorrent ingredient to his eye, make known how he hath drunk, he cracks his gorge, his sides, with violent hefts. I have drunk, and seen the spider."

Thus, auto-suggestion, the most important feature of the philosophy, is proven to have its influence. May not this explain the cause of so many immunes to virulent epidemics such as yellow fever, cholera, etc., for it is well known that many people, especially physicians, with impunity, do fearlessly attend the sick and dying of those dreadful epidemics and never take the disease?

We might mention many instances of its practical utility as a therapeutic agent in the treatment of nervous and functional diseases, such as neuralgia, hysteria, hypochondria, etc., and even some organic or structural diseases, its claimants assert, are cured by its wonderful influence, and that the "bloody stigmata" is brought about by the same. It is claimed by Dr. Pitzer, of St. Louis, that "cures wrought by suggestion are readily accounted for upon scientific principles, and can be demonstrated by natural laws: that the human body is made up of cells, each cell possessing its own peculiar mental power which it gets from the subjective mind, and that suggestion fixes and fastens the patient's attention upon proper methods of thought and action; and that mind has a direct effect upon the func-

tionating of the cells. So we can use it (mind) by means of suggestion to produce definite effect upon organs or functions of the body and cause a rearrangement of atoms, cells, and molecules, or actual cell changes; and that is the principle upon which all cures are made by suggestion."

It might seem superfluous to adduce facts to illustrate the wonderful power of hypnotic anesthesia, for I do not propose to cite or detail experiments made to prove the truth or correctness of psychotherapeutics, but only to say what I have said tentatively, with the view of asking an investigation of a matter about which so much is said and claimed in the press and magazines of the day.

And if we do not admit its claim, may it not be owing to a lack of its recognition and appreciation?

So I repeat, it is more with a desire to call out the views of gentlemen present than to assert my views as to the real merit of the system that I have thus expressed myself.

FRANKLIN, KY.

CAUSES OF BLINDNESS IN KENTUCKY: FROM A STUDY OF THE EYES OF THE PUPILS OF THE KENTUCKY INSTITUTION FOR THE EDUCATION OF THE BLIND.*

BY W. O. BAILEY, M. D.

For several years I have assisted Dr. J. M. Ray in examinations at different times of the eyes of the children at the Kentucky Institution for the Education of the Blind, and we have recorded the history of each case as fully as could be ascertained by physical and oral examinations.

In all we have examined two hundred and twenty-eight cases, of which one hundred and eighty-nine (189) were white and thirty-nine (39) colored.

In 1895 Dr. Ray read a paper before the Kentucky State Society, reporting one hundred and seventy-five (175) of these cases, of which one hundred and thirty-nine (139) were white and thirty-six (36) colored, since which time we have examined fifty-three additions to the institution, of which fifty were white and three colored.

* Read before the Falls City Medical Society, December 4, 1902. For discussion see p. 453.

I have thought it would be of interest to this Society to study the causes of blindness in those cases in which any considerable number were caused by the same disease. I append a complete tabulated report of the whole two hundred and twenty-eight cases at the end of this paper. Having been unable to get a report of the blind in Kentucky according to the census of 1900, I am compelled to use the census of 1890 in making a report of the statistics in this State on the subject. In 1890 Kentucky had 1,976 blind, with a total population of a little over one million, eight hundred and fifty thousand; she has, therefore, one blind person to every 940 inhabitants, which by comparison with other countries, you will see, is very high. The same census gives the United States one to every 1,218 inhabitants; in England the proportion is one to 1,235, and even in the densely populated countries on the Continent the proportion is about one to one thousand.

Authorities have shown that the poorer and more ignorant the inhabitants of a country, the greater is the proportion of blind in that country. The climate of this State and the general good health and vigor of its inhabitants and the absence of crowding should militate against the spread of contagious eye diseases, and it is a reflection upon the education of her people and the intelligence and skill of her physicians that such a proportion of her inhabitants are blind.

Inasmuch as no one competent to differentiate the causes of blindness has made an examination of all the blind persons in this State, I have thought we could get a fair idea of the causes and the proportion of each by a study of the eyes of the pupils of the Kentucky Institution for the Education of the Blind. I will now take up a consideration of the most important causes in the order of their importance, the importance being decided by the larger proportion.

We find that purulent ophthalmia is responsible for a greater number of these cases than any other one disease; sixty cases, made up of fifty-three white and seven colored, or 26.3 per cent of the total, are directly referable to this disease as a cause of blindness, and about 90 per cent of these were due to a purulent conjunctivitis known as ophthalmia neonatorum contracted during parturition, and which we all know can almost invariably be prevented if treated by the Cr  d   method of instilling a solution of nitrate of silver into the eyes immediately after birth. We found in these cases either atrophy of the eyeball or large corneal opacities, some accompanied by anterior synechia or staphyloma.

Trachoma or granular lids and its sequelæ come next in frequency with thirty-three cases, all white, or 14.5 per cent of the total number examined. The local conditions found were corneal opacities with pannus, or atrophy of the eyeball following perforation of the corneal ulceration caused by the trachoma. Some showed the inturning of the lids, or trichiasis, due to contraction or shrinkage of the scar tissue on the under surface of the lids. Please notice that all of these cases were found in the white children; very few cases have ever been found in the colored race, and those found were in the light mulattoes.

Phlyctenular keratitis or eczema corneæ is the cause of twenty-nine cases, sixteen white and thirteen colored, or 12.7 per cent. This is the scrofulous or strumous disease of the eye, and this will, therefore, account for the large proportion of the colored cases due to this disease, for we all know, being poorly fed and nourished, that he is more prone to this variety of eye trouble than any other during youth. Of all the colored cases in the institution, 33.3 per cent are due to phlyctenular keratitis. The histories of all the cases are about the same, a recurring ulceration of the eye resulting in perforation and collapse of the eyeball or large opacities of the cornea with anterior synechiæ. Nearly all of these cases have eczema about nose, mouth, and eyelids, and enlarged lymphatics or scars showing former suppuration of these scrofulous glands.

Congenital cataract occurs in twenty-four cases, twenty white and four colored, or 10.5 per cent. The most interesting part of these cases were the family histories of those that could be followed. Five of these twenty whites were in one family and two in another, while two others reported other members of the same family at home similarly affected. Some of these cases had been benefited by the Needling operation.

Irido-cyclitis was found in nineteen (19) cases, fourteen white and five colored, or 8.3 per cent. In these cases there were evidences of extensive inflammation of the uveal tract, the pupils being occluded, complete posterior synechiæ, and the eyeball diminished in tension. In several cases there was a history of blindness of other members of the same family; one showed evidences of congenital syphilis in notched teeth and facial expression.

Atrophy of optic nerve found in seventeen cases, thirteen white and four colored, 7.5 per cent of total. On account of the nystagmus or oscillation of the eyeball in a majority of cases it was difficult to deter-

mine the exact nature of the atrophy. Seven, all white, had been blind since birth; two were accompanied by microphthalmos; five gave a history of blindness following meningitis, and two measles; two, both colored, were hydrocephalic.

Traumatism in both eyes, or in one accompanied by sympathetic ophthalmia in the other eye, occurred in fifteen cases, twelve white and three colored, or 6.6 per cent. The sympathetic cases showed complete posterior synechiæ and cataract, in fact a degenerated eyeball following a penetrating wound in the sclero-corneal region of the other eye. Sympathetic inflammation is more likely to follow wounds in this location in the eyes of children than in adults, therefore such injuries in children should be watched closely.

The cases discussed above compose about 87 per cent of all the cases examined, and I will go no further into the discussion of diseases that caused only a very small per cent of the total number. I will only mention one other case, which is interesting on account of its rarity, as only about forty cases, I believe, are on record. It is a case of anophthalmos, or congenital absence of both eyeballs. In this case the family history was good, both parents being healthy, but one other child, a sister, was blind. This child otherwise was well developed physically and mentally.

TABULATED REPORT OF CASES.

	WHITE.	COLORED.	TOTAL.	PER CENT.
Purulent ophthalmia,	53	7	60	26.3
Trachoma,	33	..	33	14.5
Phlyctenular keratitis,	16	13	29	12.7
Congenital and lamellar cataract,	20	4	24	10.5
Irido-cyclitis,	14	5	19	8.3
Atrophy optic nerve,	13	4	17	7.5
Traumatism and sympathetic ophthalmia,	12	3	15	6.6
Congenital syphilis,	6	..	6	2.6
Retinitis pigmentosa,	3	1	4	
Albinismus,	4	..	4	
Congenital central choroiditis,	4	..	4	
Congenital glaucoma with atrophy,	3	..	3	
Hydrophthalmos,	2	..	2	
Nystagmus,	1	1	2	
Amblyopia with high myopia,	2	..	2	
Amblyopia with hypermetropia,	1	..	1	
Traumatic cataract (one eye),	1	..	1	
Smallpox,	1	1	
Anophthalmos,	1	..	1	
	189	39	228	

LOUISVILLE.

Reports of Societies.

FALLS CITY MEDICAL SOCIETY.*

Stated Meeting, December 4, 1902. Dr. G. A. Hendon, President, in the Chair.

Paper by Dr. W. O. Bailey, "The Causes of Blindness in Kentucky." (See page 449.)

Discussion. Dr. Adolph O. Pfingst: I am sorry that I am not able to speak to this paper as I should like, for it is a very interesting one. It takes some one who has examined a large number of blind to get an idea as to the causes. I have looked up the subject somewhat, and believe that the statistics given by Dr. Bailey correspond pretty well with the general statistics. This is surprising, because the figures are generally taken from the standpoint of the laity, and those cited by the essayist are, I would say, cases of real blindness. Blindness means to the layman those cases which are blind for all practical purposes, while ophthalmologists consider an eye blind that has lost absolutely all sight, even perception of light. This accounts for a certain amount of fallacy in all statistics gathered for general use.

We can readily see that there would be a great many blind persons whose sense of pride would influence them not to give in their names for census purposes, and this is another cause of fallacy.

As to the causes of blindness, I think we all ought to be struck with the frequency of cases due to gonorrhea, and realize the importance of washing out the conjunctiva in newborn children. I think the average of blindness attributable to this disease for the entire United States is even greater than 26 per cent. Fortunately, gonorrheal conjunctivitis is much less common in adults than in children, as they do not offer the same possibilities to cure as children.

There is a certain number of cases of blindness, probably 14 to 18 per cent, in which the causes are not known. It is my opinion that in the entire United States about 60 per cent of the cases in which the cause is known may be ascribed to idiopathic causes. Traumatic loss of the eye include a great number lost during the first few years of life. Between one and five years is the period of greatest danger to the eye.

*Discussion reported by Edgar Allen Forbes.

A point which the doctor did not sufficiently impress is the importance of considering brain and spinal conditions in connection with blindness. In the adult the most common cause of blindness is optic atrophy, occasionally associated with brain conditions. I think this takes up the most common causes, but we might enumerate a host of others. These are the ones that interest us most, for these are the ones we come into contact with every day.

Dr. I. Lederman: This paper does not cover all the ground, as it is a tabulation of observations on persons who have become blind in childhood, and does not consider those who have become blind later in life. Of course, adult cases of blindness do not go to an institution. It occurs to me that the important point to consider in connection with this report is, What are we going to do for prevention?

Another thing must be borne in mind, that these statistics cover cases in which the cause of blindness is some years back, and I believe the statistics of a few years hence will give a more favorable report. A great many of these cases of blindness are due to gonorrhea, caused before the introduction of the Credé method. The principles of asepsis are more thoroughly applied now than ever before, and the census of 1900 will show a much better report than the census of 1890. An examination of the children in institutions like this a few years hence will give more favorable results.

It is my impression that most of the children in the institution come from country places and small towns throughout the State, and comparatively few from the large cities. We know that a great many of our trachoma cases come from such sections, where they have not had the benefit of modern knowledge of ophthalmology. Now that this knowledge has been more widely disseminated the general practitioner is giving more attention to diseases of the eye than he did formerly. He at least recognizes the serious nature of certain eye diseases, warns the patient of the dangers, and promptly refers him to the specialist.

Dr. J. M. Ray: I do not know that I can add very much. I have prepared and read two or three papers on similar subjects in various societies, State and local.

I have forgotten the statistics, but one thing that has impressed me is the large number of so-called contagious preventable cases. Purulent ophthalmia has the largest number, and next trachoma, both of which are looked upon as preventable. Both are due to a specific

organism, and both are contagious. I think these statistics will show that nearly half the blind in this State are blind from one of these two causes, and it should impress on us the importance of teaching the people with reference to these diseases and the methods of their prevention.

The question of trachoma is most in the public mind, for the newspapers have been full of an epidemic of acute granular lids in the public schools of New York City. The schools were closed, and I am informed that the institutions were so overrun that they were unable to take care of the cases.

Here in Kentucky we have in certain localities a very virulent form of trachoma. I have seen so much of it that as soon as I look at the case and note its characteristics I can guess quite accurately from what part of the State the case came. There are at least three well-known centers for trachoma in this State, from which come to us many cases of blindness or hopelessly defective eyes.

Another point brought out in connection with the examination of these cases was the fact that there is no trachoma among the colored children. I have never seen a case of true trachoma with secondary corneal involvement in the colored race. They suffer quite as often with phlyctenular conjunctivitis as the white race, but the clinical distinction between the two is very great. I have never seen in phlyctenular conjunctivitis involvement of the cornea, and they all get well by treatment.

The paper is a very interesting one, and I am glad that Dr. Bailey has brought the statistics together more compactly than I have ever done in papers on the same subject.

Dr. Pusey: Dr. Ray spoke of the conditions in New York, and I read in a paper a week or two ago that fourteen thousand children had been excluded from the public schools on account of trachoma. To one who was born in a town of seven hundred people that seemed like a lot of people, but the article in the paper was to that effect. The paper by Dr. Bailey does not deal with trachoma, but I think that is one of the most obstinate and disagreeable diseases we come in contact with, and I think it causes more blindness than ophthalmia neonatorum. This has been my experience. As to blindness from other causes, that brings up another phase of the subject, that is, the detection of blindness. I have had to deal with a case of this kind very recently. It was that of a man who claimed to be blind, but so far as

I could learn from the history of the case there was no reason for his claim. There was no indication of blindness except that he claimed that he could not see. It is frequently a question as to how to detect whether one is blind when he makes that claim—the different conditions back of the eye as well as the inflammatory conditions in front.

Glaucoma is a very frequent cause, and comes on unexpectedly in many cases. There are various causes of loss of vision that give no evidence of it externally. I was expecting to hear more about the causes producing blindness aside from the external inflammation, the nervous affections, the constitutional troubles that cause it, the retinitis and inflammation of the optic nerve. I have enjoyed the paper and am sorry I could not discuss it more intelligently.

Dr. B. C. Frazier: I enjoyed the paper and agree with Dr. Lederman that the statistics being gathered now will be very much more encouraging, in spite of the outbreak in New York reported by Drs. Ray and Pusey. I think the statistics of ophthalmia neonatorum will be very much improved, for the doctors all over the country are paying more attention to the eyes in delivering babies than they did formerly, consequently there will be fewer blind children. I would like to ask the doctors present if any of them can remember any bad case of ophthalmia neonatorum in the last few years? I have had but one bad one in my practice, and that was in a very poor family. It was evidently due to gonorrhea, and the eye was saved.

Dr. H. N. Leavell: I am not classed among the specialists in this line, but I have had occasion to observe many cases of eye trouble in the college clinic during the last seven or eight years. Like Dr. Ray, I have never seen a case of trachoma in the negro, though I have seen the phlyctenular conjunctivitis, which differs from trachoma in not being a specific infectious disease. Phlyctenular keratitis is more common in the colored race, because of their bad hygienic conditions, and I believe I may safely say that 25 per cent of the eye diseases in the colored race that present themselves at the college clinics are due to phlyctenular keratitis. Dr. Bailey brought out a very interesting point, of special interest to the doctors in the country, in regard to injuries in the sclero-corneal region as being more productive of blindness. It is conceded by all that injuries in this region are more potent for danger than in any other, and require greater care in watching.

Dr. J. B. Bullitt: There is not much I can say. Whenever I hear diseases of the eye taken up I feel again that there is no more impor-

tant branch of the profession than that of the specialist in this line, for there is no more deplorable member of society than the man who is blind. I have talked with Mr. Huntoon in regard to the old idea that blind people are apt to have their wits very markedly developed, and he thinks it is a mistake. He says that these blind children do not learn so rapidly as the children with eyes, and that while a few of them develop in a marked degree most of them are deficient. This was a surprise to me, because I had been led to suppose the contrary was true. He tells me that if a child with eyes were put to tasks blindfolded he would learn much more readily than the blind children themselves.

As I say, it is only in a general way that I speak at all, and therefore it seems to me more attention should be paid to the prevention of such diseases as produce blindness. As to ophthalmia neonatorum, I remember that great stress was laid on the importance, when I was a student, of the midwife's using proper treatment with the newborn. I would like to call the attention of such doctors as are not already familiar with it to a new silver preparation which bids fair to replace all the other silver combinations in the treatment of gonorrheal disease, and that is argyrol. If we can believe the reports circulated over the country, it seems to have every advantage over the other silver solutions. The mucous membranes of the body will bear a much stronger solution of this than of the others. The gentlemen who have tried this in New York and Philadelphia report cases of gonorrhea as absolutely cured in three or four weeks. This is a remarkably short space of time, and the fact that this can be used with no unpleasant reaction, and has greater efficiency, would seem to give it every advantage over the others. If any gentleman present has used it, and can report on its results, I am sure we would be interested in hearing him. In the one or two cases in which I have used it, it has borne out the statements made concerning it. It is apparently excellent in old gleet cases, and causes a cessation of the discharge in a short time. I should think it would be very serviceable with the newborn. It is used in any strength in acute cases.

Dr. C. G. Lucas: I have been fortunate enough to have had only one case of ophthalmia neonatorum in my practice, and that was cured. The paper will serve to remind the general practitioner of the danger to which the children are subjected, and will put him on his guard.

Dr. W. F. Boggess: I think the specialists sometimes feel that such subjects as this will not please the general practitioner, but they are of

great importance to us and I am glad to have heard this and Dr. Pusey's paper on external ear troubles. The only thing I care to say is that I was surprised to hear of the large number of cases of blindness from congenital cataract and cases due to optic neuritis other than meningitis. I did not know that it was a disease without any previous history of meningitis.

Dr. W. O. Bailey: All the history obtained in these cases was secured from the children themselves.

Dr. G. A. Hendon: I have nothing to say except to acknowledge that at almost every meeting of this Society, whether addressed by specialists or not, I am rebuked for certain matters of carelessness which are so apt to creep into our practice. We lose sight of many important duties that ought to be performed and we are indebted to Dr. Bailey for impressing on us the prominence that gonorrheal ophthalmia plays in the production of blindness. We go along and deliver case after case without any symptoms of eye trouble coming up, and then we get lax in our methods and overlook the care of the eye. If this paper does nothing more, it will at least stimulate the general practitioner to greater carefulness.

Dr. W. O. Bailey: I believe that the percentage of blindness due to ophthalmia neonatorum is going to decrease. It is decreasing now, due to the more intelligent treatment of those who contract it. Formerly it went on to blindness because the doctors did not know how to treat it. The percentage will be materially decreased on that account. In regard to the pupils of this institution, none are received over eighteen years of age, and they have to leave at that age. So the study of these statistics has nothing to do with the causes of blindness occurring in adult life. All of these pupils are not totally blind. Some of them have fair vision, but not enough to enable them to get an education in the public schools, and therefore they have to look to an institution where they can get it.

Dr. G. A. Hendon: Why is the percentage higher in the country?

Dr. W. O. Bailey: I can not tell. Possibly most of them come from the mountain regions and the back counties, where they do not have access to the doctors, and they get blind before the doctor has a chance to see them.

Dr. A. O. Pfingst: Did you include the half-blind in the statistics?

Dr. W. O. Bailey: All of them are included in the report.

Reports of cases. Dr. W. F. Boggess: I might report a rather unusual case. About four weeks ago I was called to see a woman with

peritonitis. She was in a very septic condition, temperature on the third day 106° , pulse 140. After close questioning I found out that whenever she ran over the time for her menstrual sickness she would bring it on by opening the womb with a "meat skewer." This was the first time I had ever run up on the meat skewer. I have seen lead pencils, pens, goosequills, slippery elm bark, and other things, but this was a new one to me. I have found three cases that had relied upon a piece of sharpened slippery elm bark. Why they used it in that form I do not know. One woman told me she had bought it from a woman who was going about from house to house.

Dr. J. B. Bullitt: I had a case the other day which may be of some interest. A little boy had been sick for a week with appendicitis; had a large abscess in the right side when I first saw him. I advised operation to evacuate the pus. We all know that the safe time for operation expires before the end of a week, and many of us see cases in which we are loath to operate after the third or fourth day unless an abscess is present; then operation is made as short as possible to relieve the condition, evacuate the pus, and give the patient a chance to weather the storm. This boy's temperature was 103° , pulse 120. An incision was made over the center of this mass and carried into the abscess cavity. The pus was very foul, and after evacuating it the sac was explored with the finger. The great danger in these cases is that of opening up a new area and producing sepsis. I did not find the appendix, but an enterolith which had been discharged into this cavity. The boy ought to have gotten well, but his pulse began to go up and he became delirious. The discharge became more offensive and the gangrenous process extended from the appendix into the cecum, and he died about thirty hours after the evacuation of the pus was made. I had no opportunity of examining the body, but I think it was the gangrenous process which caused death. I have no reason to suppose that the operation hastened the death of the child.

Cases of this kind should impress on us the fact that practitioners who see these cases early do not fulfill their duty. Some one has said that there was never a case of appendicitis that died but that might have been saved at some time. There are cases that go like a whirlwind, before anything can be done, but most of these cases can be saved early. They are carelessly allowed to go on in the belief that they will improve.

NEW YORK ACADEMY OF MEDICINE—SECTION ON ORTHOPEDIC SURGERY.

Meeting of November 21, 1902, George R. Elliott, M. D., Chairman.

Dr. Homer Gibney presented a cured case of Pott's disease in a child three years old, with the following history: Six months ago, (January, 1901) from no known cause he began to walk awkwardly; the abdomen was thrown forward and he swayed from side to side with evident pain. Nothing was noticeable but the above till June, when a swelling appeared in the left buttock, which interfered with locomotion. He was treated at various hospitals and operated on at the Eighth Street Hospital by aspiration, pus and blood being withdrawn. Examination showed fairly well-nourished child; nodular swelling on left buttock posterior to the great trochanter, tense but not painful. Boy could not walk. The body was thrown forward, the abdomen prominent. In the effort to pick up a penny he supported himself by hands on knees. The lumbar spine was rigid and there was a slight prominence at the fourth lumbar vertebra. On August 1st a frame was applied and the grandmother was instructed in its care. December 20th, doing well, very little deformity; swelling on the left side had disappeared. January 11, 1902: Back in good condition, no deformity, fairly flexible. July 1, 1902: Has worn permanent jacket for two months, which was applied and allowed to dry on the frame, thus getting complete fixation in over-corrected position. November 18th: Left off the apparatus; spine flexible, no evidence of disease, discharged cured.

As to treatment, he said the frame was the one used in dispensary and private practice, a modification of the Bradford frame, made of canvas over gas piping, easily bent from time to time, thus over-correcting the deformity.

Pott's Disease—Three Cases under Treatment. Dr. Charlton Wallace presented three cases under treatment on the Whitman modification of the Bradford frame, the duration of the disease being twelve, eight, and six months respectively. He said while as a rule cases over eighteen months of age are not treated by the frame, one of the cases presented was four years old and was doing well on the frame; in that case the disease had only lasted six months. The frame used is a parallelogram made of three-quarter inch gas piping, four inches

longer than the child, two inches excess at either end. It is made wide enough so that the side bars are opposite the glenoid cavities of the scapulæ. It is covered with tightly fitted canvas, laced in the rear. Two pads are arranged on each side of the focus of the disease, sewed to the canvas. Rubber cloth covers the canvas over the lower half for cleanliness. The apron is attached to three buckles on the sides by straps which are kept tight. The frame is gradually bent backward till the highest angle of the bend is at the site of the disease, so that the back is hyper-extended and the pressure relieved from the bodies of the vertebræ.

Dr. R. H. Sayre said he thought the treatment excellent. He used a similar treatment. He believed, however, that Dr. Wallace allowed the patient too much freedom of motion. He considered the motion of the legs unwise, as the play of the psoas muscle exercised a great deal of action on the spine, especially if the disease affected the lower dorsal or lumbar regions. In such cases the legs and trunk should be controlled; a jury mast to the frame would be an advantage. He preferred the cuirass, allowing control of both extremities of the spine. It was also injurious to take the child off the frame for movements of the bowels and bladder, as so much moving would cause traumatism of the spine.

Dr. Royal Whitman stated that he had described and illustrated the treatment illustrated by the cases presented some years ago and thought it better than the cuirass or other flat apparatus, because of the over-extension which this apparatus allowed. He further remarked that children were not removed from the frames for movements of bowels, diapers or an ordinary dustpan being used while the child was in position on the frame. Head and leg traction could be used if necessary, but that the position of over-extension itself was a great protection to the spine; it is also an advantage to have the side bars close together, as this allowed of less sagging than in the original Bradford apparatus. He further observed that the clothing adjusted over the frames was arranged to include the frame and the child. If further fixation were desired the child was suspended and a light plaster jacket applied. The patient was then replaced on the frame, to which its jacket must conform in hardening, thus assuring fixation and over-extension.

Dr. Wallace, replying to Dr. Sayre, said that none of the cases shown were lumbar, and a band was passed over the forehead to restrain head movements.

Congenital Dislocation of the Hip. Dr. Whitman presented a patient operated upon five years ago for congenital dislocation of the hip, by the open method with enlargement of the acetabulum. But one side was operated upon, as ankylosis appeared probable. Now the patient, a girl aged eleven years, limps on the unoperated side and considers the ankylosed limb the "good one." The operated limb is two inches longer than the other and is much larger. There is no deformity, and practically no motion in the joint. This Dr. Whitman considered as bearing out his contention, advanced some years ago, that in the treatment of unilateral dislocation secure reposition—even if motion was very limited as the result of operative interference, provided there was no deformity, was a great improvement over unreduced displacement. He mentioned three similar cases to the one presented, and stated that he thought all of them had asked for operation on the other limb.

Dr. V. P. Gibney referred to a case similar to the one presented by Dr. Whitman, in which one side had been operated on, with ankylosis, the operated leg being the better. He spoke of another case, in which the operated limb was two and a half inches shorter and the thigh three inches smaller in circumference, yet the patient walked with ease. He noted the fact that patients and parents generally regarded these results from a different standpoint than the physician, and almost invariably begged for operation on the other leg.

Dr. S. A. Twinch asked Dr. Whitman how the patient would walk with both hips ankylosed.

Dr. Whitman stated that he had refused to operate on the second limb because he feared ankylosis. He did not present the case as showing a good result, but to demonstrate the contrast between the unoperated and the operated limbs, and further, that supposing this had been a unilateral dislocation the present result would have been far better than to have had a limb which would become progressively shorter.

Dr. George R. Elliott asked Dr. Whitman if he fixed an age limit for the open operation.

Dr. Whitman said he did not fix a positive age, but thought that the open operation could be done on older patients than in the case of the Lorenz operation.

Dr. L. W. Ely asked Dr. Whitman why he had not used the Lorenz operation on the other side.

Dr. Whitman thought it probable that the case has passed from observation ; it was possible also that the Lorenz operation was not in such favor at that time.

Noisy Shoulder. Dr. Sayre presented a patient, seen two months ago, giving the history of slight curvature of the spine accompanied by crackling of the muscles over the scapula on moving the shoulder up and down ; there was also pain over the deltoid on the same side ; the impression was given that the scapula was sliding over some substance. The case was presented for diagnosis and suggestions for treatment. Dr. Sayre referred to a somewhat similar case in an athlete who, after violently lifting weights, stated that he had pain along the erector spinæ muscles, with muscular cracklings.

Dr. V. P. Gibney said he had a similar case under observation in a young woman aged twenty, who had a noisy shoulder for a year. She had intercostal neuralgia and hysterical spine. He regarded the symptom as hysterical and prescribed paquelin cautery, with rest ; marked improvement followed.

Dr. Whitman has seen several such cases and was impressed by the fact that the patients always wanted to produce the noise. He thought it was caused by a snapping tendon or possibly by a bursa beneath the scapula.

Dr. Homer Gibney stated that in giving exercises to patients he had noticed these crackling sounds in many cases, especially in one exercise for lateral curvature. He also thought it was a snapping tendon.

Dr. Elliott said he had seen similar cases and at present was treating a girl for lateral curvature of the spine who had the noisy shoulder to a marked degree. When he first saw her the scapula was quite immovable. She had been taking rather vigorous exercises under treatment, and as a result the scapula had become quite mobile and the noise was very marked. The slipping of tendons did not satisfactorily explain this objective symptom.

Dr. Leonard W. Ely read a paper entitled "A Case of Typhoid Spine." He referred to the summary and analysis of twenty-six cases reported by Dr. F. T. Lord in the Boston Medical and Surgical Journal of June 26, 1902, since Gibney reported his first cases in 1889, and said he had found three more cases reported.

The patient he referred to in his paper was a physician aged thirty-three years, who had a severe type of typhoid fever, January, 1902,

complicated with pneumonia and pleurisy. At the end of six weeks, when the patient began to sit up, weakness of the back was observed. Following the convalescence in March, the weakness in his back continued and was made worse by an attempt to stoop. A lateral curvature and stiffness of the lumbar spine was observed, with some pain and great difficulty in standing erect. March 23d, a severe chill was followed by pneumonia of the left lung, complicated with pleurisy with effusion.

After three weeks, when the patient began to go about, the lateral curvature was quite marked and was accompanied as before by stiffness, weakness, and lumbar pain; no sensitiveness of spine to pressure. He went to Southern California early in May, but the spinal symptoms did not subside. The stiffness, weakness, and pain were increased by exertion. A severe cramp in the left lumbar region followed an attempt in rising from his chair, and returned each time he attempted to get up, so that he was compelled to keep his bed. When quiet in bed the pain did not return. A severe spasm in the left lumbar region, however, followed while turning over in bed. The spasm was tonic in character, lasting thirty seconds, gradually relaxing, then returned and was only relieved by chloroform inhalation after moderate use of morphine had failed. It was necessary to chloroform the patient when subjecting him to any effort.

The pain shifted to the right lumbar region, the spasms became less severe and were controlled by morphine. Examination showed patellar reflexes exaggerated, intermittent twitchings of the muscles of the thigh, no loss of sensation, no paralysis.

Spasms in the back continued, sometimes causing opisthotonos. Spasmodic attacks continued at intervals until July 27th. After this he often had the so-called "starting pain" upon falling to sleep. On September 22d a Taylor brace was applied and improvement from this on was rapid, but pain and stiffness in the right groin persisted for some time.

Stiffness and limitation of the lumbar spine were the only objective signs when he returned to New York, October 13th. He still wears the brace.

Referring to the pathology of typhoid spine, he said no autopsy had ever been reported. He believed it, however, an osteitis probably combined with a periostitis, and a probable neuritis caused by the inflammation of the bone and periosteum. This was generally considered

to be the pathology of typhoid spine, but Osler thought it a neurosis and reported six cases.

Of the reported cases, twenty-six out of thirty were in males. The symptoms of the reported cases were much like those of lumbar Pott's disease, but more acute, and had the history of typhoid. Rest was the essential in treatment. Local applications did little or no good.

Dr. Whitman agreed with Dr. Ely that cases of typhoid spine were not so very uncommon. He had seen a number and had one case now under treatment at the hospital, a child ten years of age.

Dr. V. P. Gibney considered the history presented by Dr. Ely as the most complete on record, and agreed with him as to the frequency of the affection. There are all degrees of typhoid spine, some very mild and similar to those described by Osler. He had never been able to trace any definite trauma as cause. He was surprised that no relief was experienced from the cautery and thought it was not properly used, as he had obtained good results from it. He had nothing to add to the pathology. He thought the cases with kyphosis should not be included in the class of typhoid spines.

Dr. Whitman wished to know why cases were not to be included with typhoid spines in which kyphosis indicated destruction of the vertebræ.

Dr. Gibney answered that if the vertebræ were destroyed there would evidently be a destructive inflammation, which was apparently not the case with typhoid spines, the condition being rather one of overgrowth of tissue. He was inclined to think that in the deformed cases a tuberculous element was present.

Dr. Sayre referred to a case of what he called "diphtheritic spine" following an attack of diphtheria. The disease left a slight nephritis and spinal disturbance, attended with a certain amount of lateral deformity and interabdominal abscess formation, presumably the consequence of the diphtheritic infection.

Dr. Elliott asked Dr. Ely if in his research of the literature of typhoid spine he had found recorded marked relief following the application of a carefully applied support.

Dr. Ely replied that the effect was usually put down as being very quickly favorable. He regarded Dr. Gibney's remark about application of the cautery as a point well taken, and stated that the attending physician used the instrument at a black heat and made slow application—an operation the patient did not want to have repeated. He emphasized the necessity of rest in the treatment.

Dr. A. A. Berg presented a case of acute serous arthritis. An acute osteomyelitis of the femur had developed and the case was seen three days after the onset of the disease. There was considerable effusion in the knee joint. The medulla and lower epiphysis were opened and drained and the symptoms disappeared. There was no interference with function of the knee joint.

Dr. Berg read a paper entitled "The Joint Complications of Acute Pyogenic Osteomyelitis, with especial reference to the treatment of the Purulent Forms of Arthritis." He said: "The joint manifestations that may complicate acute pyogenic osteomyelitis are divided into the sympathetic or pseudo-arthritis and the true inflammatory arthritis. The former accompany the very early stages of the bone infection, and are often the first and only physical signs of such an acute osteomyelitis. This explains why these cases are so frequently diagnosed as acute articular rheumatism. The true arthritis is due to bacterial invasion of the affected joint. The sympathetic or pseudo-arthritis adds in no way to the severity of the septic symptoms arising from the primary bone infections, and tends to spontaneous subsidence after drainage of the marrow canal. The true bacterial arthritis adds materially to the patient's toxemia, itself requires surgical interference, and is apt to leave the joints seriously impaired in integrity and function."

The writer laid stress upon the peri-arthritis that accompanies the joint inflammation, whether the latter be of mild or severe form. It is of much importance diagnostically, inasmuch as the acute rheumatic and gouty forms of arthritis are at first confined to the joint serosa, with little or no peri-arthritis. The varieties of joint inflammation and their symptoms were briefly described.

The writer has minutely described his practice in the treatment of these joint complications. The suppurative types of arthritis he divides into two classes, in which a purulent exudate into the joint is the chief lesion, there being very little destructive change of the components of the joint, and into those in which the destructive inflammation of the ligaments, cartilages, and serosa is far more important than the purulent exudation into the joint. For the former, single or multiple incisions into the joint, with evacuation of exudate and drainage by tube or gauze, yield very good results; in the latter he proposed that the suggestion of the Doctors Mayo, for such conditions of the knee joint (viz.: wide incision of the joint with partial dislocation of the

bones, and dry gauze tamponade of the joint, with dressing in the dislocated position), be applied to the other large joints. He had employed this method in three very severe cases of suppurative gonitis, with excellent results; and he felt assured that results equally satisfactory will follow the application to the other large joints. The technique of the operation for the knee and other joints was minutely described.

Dr. Sayre congratulated Dr. Berg on the result shown in the case presented. Regarding acute suppuration of the joint, he thought there was no question that radical operation in many cases would save amputation and give a useful joint.

Dr. V. P. Gibney spoke of the interesting array of surgical facts presented by Dr. Berg, and thought that the recognition of bone lesion by the earliest symptom, effusion into the joint, was a well-chosen point. In tuberculous arthritis of the knee, effusion into the joint is a well recognized symptom before the bone symptoms appear. He thought these cases were often mistaken for rheumatic and traumatic synovitis.

Dr. R. H. Hibbs thought Dr. Berg's paper instructive, though his own experience in that line of work had been rather limited. He thought cases of synovitis supposed to be acute, but really manifestations of bone lesion, were common.

Dr. Elliott cited a case under his observation. The patient, a woman thirty-nine years old, had seven years ago run a needle into her finger. The acute symptoms readily subsided. There were no more symptoms for six months, at which time she became edematous and had pains in different parts of the body. The face, legs, and arms became swollen and symptoms of general septicemia set in. The case was diagnosed as neuritis in one of our large hospitals. The pain gradually subsided, with evidence of a multiple arthritis involving the elbows, knees, shoulders, ankles, and hips. The difficulty lasted about eight months and subsided leaving the knees ankylosed. In six months two popliteal abscesses formed and a quantity of pus was removed. When seen six months ago the legs were in contracture beyond a right angle. He had straightened the legs by brisment force. Dr. Elliott considered the interesting features of this case to be (1) that symptoms did not appear till six months after the trauma; (2) mistaking the case for one of neuritis, and (3) the faulty treatment in allowing the limbs to become contracted. The patient will in time be able to walk. He wished to ask Dr. Berg what was his opinion of the

pathology of the joint lesion, as there was no pus in the joints and no known lesion in the ends of the bones.

Dr. Berg said he had seen such abscess formation after an osteoperiostitis. He stated that he was glad to learn that some chronic forms of joint lesion are attended with effusion in the early stages. He thought there was a great lack of knowledge among general practitioners concerning joint diseases, as witnessed by the number of suppurative cases in the hospitals. He thought the type of sepsis after osteomyelitis was exceptionally rapid in its course.

Reviews and Bibliography.

A Pocket Text-Book of Anatomy. By WM. H. ROCKWELL, JR., M. D., Assistant Demonstrator of Anatomy, College of Physicians, Columbia University, New York. In one 12mo volume of 600 pages, with 70 illustrations. Lea's Series of Pocket Text-Books. Edited by BERN B. GALLAUDET, M. D. Cloth, \$2.25, net; limp leather, \$2.75, net. Lea Brothers & Co., Philadelphia and New York.

This work is a brief of Gray's text-book, with the exception of a few omissions, and consequently a good book and one which will offer the student the necessary points without any descriptives or minutiae to consume time.

Lea's Series of Pocket Text-Books. Materia Medica, Therapeutics, Medical Pharmacy, Prescription Writing, and Medical Latin. A Manual for Students and Practitioners. By WILLIAM SCHLIEF, Ph. G., M. D. Series edited by BERN B. GALLAUDET, M. D. Second edition, revised and enlarged. Lea Brothers & Co., Philadelphia and New York.

The author is to be congratulated in successfully handling subjects such as are ordinarily taken possession of by voluminous writers. The American student or practitioner picks up a compend as the business man picks up his newspaper—all short, practical articles are well read and thoroughly digested. This compend, in a brusque, terse manner, readily conveys to the reader such new thoughts as will be of practical, every-day use. Medical pharmacy is discussed in a very clear manner, and confusion in terms is nicely avoided. Medical Latin is a great bugbear to a new student; in this work the author has it explained as fully as can be desired. The excellent chapters on "Classification of Drugs" evidence the effect of minute research and unstinted labor. Each chapter should be given attention; the author's forceful, pleasant manner is conducive to close reading. As a rule, literature upon "New Remedies" is made very repugnant and tiresome by reason of synthetic expressions and formidable chemical symbols; in this work the reader cheerfully notices their absence. Much information is to be gained by carefully studying the list of doses of remedies most used. Viewing the work as a whole, it is quite an aid to the student, both theoretically and practically.

The Practical Medicine Series of Year Books. Comprising ten volumes on the year's progress in medicine and surgery. Issued monthly, under the general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate School. Volume II, General Surgery. Edited by JOHN B. MURPHY, M. D., Professor of Surgery, N. W. University Medical School. November, 1902. Chicago: The Year Book Publishers, 40 Dearborn Street.

In this monthly epitome the author, both concisely and boldly, makes practical remarks of great importance to operators, anesthetizers, and assistants. The indications and contraindications of the two main anesthetics, ether and chloroform, are so well defined there can be no possible danger arising from the employment of either drug *per se*. The chapters devoted to operative technique are composed of sound arguments, based upon daily experience gained step by step in the operating room. Special reference is appropriately made to Dr. August Schachner's "Foreign Bodies Left in the Abdomen" and their effects. New methods of operative procedure are brought forward in these chapters, and comments by good surgeons are freely interspersed. The article on tumors is well developed and abounds with bright arguments relative to diagnosis. Diseases of "Special Organs" are well classed and the chapters are always kept clear of a mixed pathology and symptomatology. The author's remarks on military surgery are excellent. Throughout the author has employed a style which is both forceful and pleasant.

Physical Diagnosis. Diseases of the Thoracic and Abdominal Organs. A Manual for Students and Physicians. By EGBERT LEFEVRE, M. D. Illustrated with seventy-four engravings and twelve monochrome plates. Lea Brothers & Co., Philadelphia and New York. 1902.

This manual goes over much ground and merits careful perusal. Some readers may object to the diffuse manner which is employed in the paragraphs devoted to regional anatomy. All works on physical diagnosis show this imperative minuteness of anatomical description. Quite a number of both new and practical methods of diagnosis are well presented in the pages devoted to physical and manual examinations. A very painstaking and interesting article is to be found in the divisions and subdivisions of bronchial diseases. The excellent monochrome plates add to the diagrammatic merit of this manual. Even the busy practitioner will find this a handy reference book, for physical diagnosis primarily and radically assists therapeutic treatment. The surgeon will quickly perceive the great utility such a manual can be to him prior to establishing a prognosis. The personal observation of the author is a sequence of hundreds of careful examinations; this gives the proper tone to his remarks and renders them more practical. The tabulated description of diseases of the liver is a very good idea and lends assistance in diagnosis. Sympathetic, functional, or organic disturbances often mislead the medical attendant; this manual makes the way clear for a correct differentiation.

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DOCTOR J. M. KRIM.

In the death of Dr. J. M. Krim the city of Louisville lost one of its most worthy and esteemed citizens and the medical profession one of its most honored and honest workers.

Dr. Krim was a painstaking man and one of the most careful men in the profession. It was his delight to unearth, as it were, all of the facts connected with any case that chanced to fall under his observation, and to that end he kept himself supplied with the latest and best books that were to be found. He was an accomplished chemist, which was a great aid to him in the acquirement of his medical education. He was blessed with at least one of the characteristics of his nationality, viz., patience, which is everything with a successful practitioner of medicine. He enjoyed recreation from business and realized that it was one of the safeguards of an overworked man.

He was a member of a number of medical societies and other scientific bodies, and just preceding his death had been elected president of the Clinical Society of this city.

The following resolutions were adopted by the Clinical Society concerning his demise:

IN MEMORIAM.

The inscrutable hand of death has suddenly taken from the profession he adorned, and the community by which he was beloved, our friend and brother, Dr. John M. Krim, who departed this life suddenly on the morning

of December 10, 1902. The Clinical Society of Louisville, to the presidency of which he had been recently elected, while painfully afflicted by the sad bereavement which has befallen it, desire to attest their unvarying affection and respect for him while living, their unfeigned sorrow upon his death, and the devotion in which they will ever cherish his memory. A native of Würzburg, Bavaria, where he was born August 1, 1842, he came to Louisville in his early youth, and by the force of his superior intellect, his innate character, and his application to study, was at the top of his profession, and at an age when from his vigorous constitution he gave promise of yet many years of usefulness, he has been suddenly called from the bosom of an affectionate family and the paths of usefulness and honor which he had trodden for a third of a century.

Being thoroughly educated in chemistry, and having for some time pursued the avocation of a pharmacist, his taste and ambition led him to the study of medicine, and when in 1869, having been graduated with honor from the medical department of the University of Louisville, he entered upon the practice of his profession so thoroughly equipped, and with such elements of zeal and personal attraction, that he at once foreshadowed in his practice the success and popularity which placed him in the front rank of his calling. To the substantial merit which secured him this recognition, his friends and associates desire here, not in the language of fulsome eulogy, but in the simple tribute of sincere respect and sorrow, to bear the fullest testimony which language can convey. In recording this expression of our own feelings we desire also to tender our sincere sympathy and condolence to his bereaved wife and family.

“ Brave heart, high mind, and noble soul,
Farewell, until we come to thee !
Rich was thy journey to the goal,
And great thy bliss and state shall be.”

Resolved, That these proceedings be spread upon the minutes of the Society, and that an engrossed copy be sent to the family of the deceased.

CARL WEIDNER, M. D., *President.*

PHILIP F. BARBOUR, M. D., *Secretary.*

Current Surgical and Medical Selections.

POULTICES AND COUNTER-IRRITANTS.—Some very useful information upon this subject is contained in an article by Hanna Kindborn in the *Trained Nurse* for February. She writes at some length upon local applications for the treatment of inflammation, describing leeching, cupping, bleeding, hot and cold applications, etc. She then speaks of poultices as follows:

A hot poultice should be hot, moist, light in color and weight, applied to relieve inflammation, draw pus to surface, etc. Should never be allowed to get cold on the patient; should be put between folds of gauze or muslin; lubricate skin, test heat against your cheek, remembering that the interior is warmer than the exterior. Cover with absorbent cotton and bandage loosely. Apply poultice gradually by allowing it to slip from the hand. Make poultice two inches larger all around than the inflamed area. Discontinue use of the same as soon as tissues are softened and pus evacuated.

The following poultices are mostly used: Flaxseed or linseed meal, bread, yeast, flour, Indian corn and oat meal, carrot, onion, slippery elm, charcoal, antiseptic soap, starch, spice, butter, digitalis leaves, etc.

Flaxseed meal poultice is made by stirring the meal into boiling water, allow it to boil until thick enough to cut with a knife, remove from fire, beat well, put between folds of gauze; apply.

Bread poultice is made of old bread or crackers, boiled in water until mushy; drain, beat well and quickly put between folds of gauze; apply.

Yeast poultice: Take freshly made dough, put in bag large enough to allow the dough to rise; apply while rising.

Flour poultice is made as flaxseed meal poultice, after the flour has been thoroughly mixed in cold water.

Indian corn and oat meal poultices are made as flaxseed meal poultices.

Carrot poultice: Scrape carrots fine, put between single fold of gauze; apply in cases of irritating skin diseases.

Onion poultice: Chop onions very fine, apply as above; used in cases of bronchitis and croup in children. Prevent exposure afterward, as the pores are opened.

Slippery elm poultice: Take slippery elm, soak in boiling water until soft, drain, beat, and apply. Used in skin diseases when elimination is too acid in reaction.

Charcoal poultice:

Charcoal, well powdered,	dr. 4;
Bread crumbs,	oz. 2;
Boiling water,	oz. 10;
Flaxseed meal, q. s. to make a thick paste.	

Sprinkle half of charcoal in poultice and half on wound. Used in gangrenous sores.

Antiseptic poultice: Use flaxseed meal and 1 per cent antiseptic solution in place of water. For gangrenous and otherwise infected wound.

Soap poultice: Used in preparing surface of skin for surgical operations. Either made with solution of green soap in which gauze is soaked and wrung out from, or green soap paste, thinly spread on gauze.

Starch poultice, made like mucilage of starch, only thicker; applied cold in cases of irritating skin diseases.

Butter poultice: Used in cases of colic in children. Melt butter, soak flannel, and apply hot to abdomen.

Digitalis poultice: Used in retention of urine. Make a flaxseed meal poultice, sprinkle powdered digitalis leaves either over the surface of poultice or stir it in with the same.

Jacket poultice: Make an ordinary double jacket of flannel, open at shoulder, sides, and front; fasten with tapes. Slip poultice between. Or quilt gauze and cotton batting, and use as a protector in pneumonia cases.

Spice poultices are made with all kinds of spices; put in a bag, soak in brandy, and apply as a counter-irritant.

Counter-irritants.—Rubefacients, mild irritants: Tincture iodine, chloroform, mustard, turpentine, ammonia, tincture capsicum.

Apply tincture iodine three times in succession; if covered over will irritate more. In some individuals this drug produces pustular eruption.

Chloroform can be applied as liniment, as: Soap liniment two parts, chloroform one part; rubbed into the skin with the hands; or it can be applied pure, pouring same on a blotting paper and applying to skin. Both ways are beneficial, and when used the parts should be covered over, as it is the vapor accumulated that irritates. When using the blotting paper be careful not to let it blister.

Mustard can be used as paste poultice, paper, and leaves.

Paste is made as follows:

Mustard,	1 part;
Flour,	1 to 5 parts;
Tepid water, q. s. to make paste.	

Or mustard and the white of an egg can be made into a paste. Avoid using vinegar and hot water, as they change the active principle of the mustard. Put paste between folds of gauze, lubricate skin; if cold weather apply first with a hot fomentation; apply paste, cover well over with cotton and bedclothing, allow to remain until skin becomes red, generally ten to twenty minutes, remove, and powder surface of skin with talcum powder.

Mustard poultice is made by adding one to four drachms powdered mustard to a flaxseed meal poultice.

Mustard paper or plaster is used by first soaking in tepid water, skin lubricated, and paper applied.

Mustard leaves are placed in a muslin bag, dipped in water (tepid), and applied. This form of mustard poultice is used for children.

Turpentine is either used as an emulsion, applied like chloroform liniment, or as a stupe.

Ammonia is used as a liniment, applied like chloroform liniment.

Tincture of capsicum is very strong and used sometimes to blister; it is very irritating to the skin and can be removed with alcohol, if so desired.

Vesication or blistering is done by applying cantharidal plaster or collodion. The plaster should be applied as follows: Cut a hole in a piece of adhesive plaster as large as you desire the blister, apply to surface made surgically clean and rubbed with turpentine (shaved if necessary), put the cantharidal plaster in the opening made and fasten loosely with a bandage. Eight to fifteen hours are required to draw a blister, but the formation of the same can be hastened by application of heat over the plaster.

1. Open the blister thus formed by inserting a sterile needle one-fourth of an inch below and above the blister into the same, thus forming a canal through which the fluid finds an outlet. Apply sterile cotton to absorb discharge and change when required.

2. Open blister by cutting a few openings in the same; dress as above mentioned.

3. Open blister by removing skin at once, quickly apply sterile cotton to exclude air. Wash with normal salt solution when changing dressing.

When using cantharidal collodion, apply it with a camel's-hair brush to the skin.

Drugs that produce pustular eruption are croton oil (*oleum tigli*) and tartar of antimony.

They are rubbed into the skin and will in a short time form the pustulars.—*Med. Standard.*

RESECTION OF NEARLY EIGHT FEET OF GANGRENOUS INTESTINE: RECOVERY.—Harris (Medical Record, New York, October 11, 1902) states that the removal of large portions of the intestines, with recovery of the patient, is becoming much more common than in former years, and where there is an abundance of time in which to prepare the patient, with plenty of assistance and good light, this operation is robbed of many of its difficulties; but when, on the other hand, the operation is performed in an emergency, after the patient has been brought a long distance in an ambulance, he being more or less exhausted, with a violent peritonitis in progress, it is an entirely different thing. These circumstances, together with the extreme length of the intestine removed and the apparent complete recovery of the patient, are the reasons for reporting the case of a man, aged thirty-three years, whose history was negative except for four attacks of severe abdominal pain during the past five years. The present attack came on suddenly in the morning with severe pain, which centred in the umbilical region. This soon passed off under brandy and massage of the abdomen,

and the patient laid down and slept about an hour. On arising the pain began again, and was more severe than at first. A physician was called and two hypodermics, each of one-quarter grain of morphine sulphate, were given without relief. The patient vomited fluid and mucus, and enematas of hot water proved ineffectual. There was a point of tenderness about the size of the palm of the hand above and to the left of the umbilicus. Operation being decided upon, the patient was removed to the hospital in an ambulance, a distance of twelve miles, and arrived there at 1.30 in the morning. Nothing definite was learned by an examination of the abdomen, and an incision was then made in the right hypochondrium. As soon as the abdomen was opened there was a tremendous gush of blood-stained serum containing blood and lymph, showing that an acute peritonitis was in progress. Exploration with the fingers showed a large mass of intestine bound down in the right iliac region, so the wound was closed and the abdomen reopened in the median line, when a very large mass of gangrenous intestines appeared. The mass was about seven inches in the transverse diameter, and the coils of which it was composed ran, for the most part, transversely; a few, however, were parallel with the long diameter of the abdomen. The point of constriction was close to the posterior abdominal wall and the cecum. It being impossible to uncoil the intestines, the constricting band, which seemed to be mesentery of about the size of a lead pencil, was divided and the intestines spread out on hot towels and allowed to remain for over twenty minutes. The intestine proved to be the ileum; the mesentery in many places was sloughing and entirely gone. There was one spot where a perforation had taken place, but there did not seem to have been much extravasation. The color not having improved, the ileum was clamped and divided close to the cecum, the remaining vessels of the mesentery were tied and cut away close to the spine; above, the division was made one inch from the upper limit of the gangrene. The mass of gangrenous intestines was then removed, and the abdomen thoroughly flushed out with hot salt solution and preparation made for joining the intestines. The opening in the cecum was closed, the edges being inserted and closed with a double row of Lembert sutures, one half of a Murphy button being first put into the cecum. This button was then pushed against the wall on the other side of the cecum beside the appendix, and an opening being made, the button was brought through and held by an assistant. The end of the ileum was inverted and closed by a double row of Lembert sutures, the second half of the button having been previously placed in the bowel. This was brought through in the same way as the other, and the intestine was joined to the cecum by a lateral anastomosis. No additional sutures were required except in the mesentery. The abdomen was again thoroughly flushed out, the wound closed in the usual manner, and a wet bichloride dressing applied. The portion of intestine removed measured seven feet ten inches. The patient had two large abscesses in the abdominal wounds during convalescence, one at the first incision and the other at

the opening in the median line. These finally closed and the patient left the hospital weighing more than when he entered, and now feels as strong as ever. The Murphy button was found in the rectum on the twenty-fourth day and removed. In closing the author gives a list of thirty-five cases in which the length of the resected portion of intestine varies from forty inches in the first case to twelve feet two inches in the last.—*The Journal of the American Medical Sciences.*

A NEW METHOD OF EXTRACTING FOREIGN BODIES FROM THE EAR.—There is no more delicate and even difficult task, so states the Medical Press, than the extraction of a foreign body from the external auditory canal. Irrigation often fails to bring it away, and in certain cases adds to the difficulty by causing the object, a pea for instance, to swell and become more firmly impacted. The employment of instruments is very painful, and requires considerable dexterity, besides supposing an armamentarium specially designed for the purpose, which few general practitioners possess. The recommendation is made of a piece of soft rubber tube, the length of a cigarette, and of the proper size, to be introduced into the ear. The end of the tube is dipped in paraffin and pushed into the canal until it comes in contact with the foreign body, whereon the operator, applying his mouth to the free end, aspirates forcibly, at the same time throwing back his head. Except in cases of angular bodies of irregular contour this method is usually attended by success, the body coming away with the tube.—*Journal American Medical Association.*

ANESTHETICS.—The fatal cases of anæsthesia are classified by Miller under the following heads: 1. Those where the anesthesia was blamed because no other cause of death was recognized. These are only of interest because of their frequency. 2. Cases in which the effect of the anæsthetic on organs already diseased hastened the inevitable fatal termination. This mortality can be diminished by careful preliminary examination and preparation of the patients, and by attention to the selection of the particular anæsthetic to be employed. Instead of sticking to ether in every case, we have at our disposal cocaine, which has an indefinitely wide field of usefulness, nitrous oxide with practically no mortality for brief operations, and sometimes longer ones, and chloroform, which may be safer in certain conditions, as in the young and very old, kidney and lung disease, diabetes, in the obese, in dyspnea from any cause, narrowing of the larynx, and in operations about the brain and mouth. The combination of oxygen with ether or chloroform may save patients who can not otherwise undergo the anæsthetic. In the third class, where deaths are due to improper administration or overdose of anæsthetics, the difficulty is twofold, and consist of inappreciation of the potency of the agents employed, and in a lack of understanding between surgeon and anæsthetist. Medical schools slight the subject, hospitals pay little attention to it, in private prac-

tice anesthetics are daily administered by those who have no experience and have not studied or interested themselves in the subject. Bungling administration, overloading the lungs with the anesthetic at any one time are responsible for some of these cases. The anesthetist should have a thorough knowledge of the physiologic action of drugs, and there should be no misunderstanding as to the immediate responsibility. He is in a better position to observe the general condition of the patient than the operator, and should have chief consideration in this respect.—*Ibid.*

A CASE OF GESTATION AND LABOR AT FULL TERM IN UTERUS DIDELPHYS.—(By Dr. J. H. E. Brock, *Lancet*, November 15th.) The author reports the case of a woman, aged thirty-five years, who had been attended by him ten years previously at the birth of her first child. When first seen at that time, labor had so far progressed that the head of the child was nearing the outlet of the pelvis, and vaginal examination revealed nothing abnormal. Labor progressed normally and uneventfully, as did the puerperium, the child being a well-formed girl. Six months later, having occasion to make a vaginal examination because of a complaint of difficult coitus, it was found that the patient had a complete double uterus (uterus didelphys), the vulva and vagina being divided by a median septum. In each vagina there was a complete cervix, and on passing a sound the body of the uterus was found to be also double. The septum was removed by operation. Nine years later the patient again became pregnant, and was again delivered at term of a normal infant. The pregnancy took place in the left horn of the uterus, the non-pregnant horn being rotated anteriorly and rising up out of the pelvis.—*New York Medical Journal*.

TECHNIC PROSTATECTOMY.—The method described by Bryson is the perineal one, in which, after the introduction of the staff, he makes a free median incision in such a way as to open the urethra just in front of the apex of the prostate. The forefinger is introduced and the staff withdrawn. Guided by the finger a blunt instrument is passed into the urethra and made to puncture, from the urethral side, the lowermost part of the mass. The puncture is always made in the lower posterior quadrant, and the instrument pushed well into the swelling. The finger follows, tearing its way in the opening through the capsule and loosening the lobe as far as its attachment to the urethra from which it is detached, care being taken not to take away too much of the sides nor any of the roof of the urethra. The hypertrophied lateral lobe is then removed. The process is repeated on the opposite side, after which a median posterior segment sometimes remains to be dealt with, which can easily be excoccleated. Usually the finger can be then passed into the bladder, which is explored. The cavity is irrigated with a hot salt solution and a loose flap of mucous membrane found that can be made to occlude the vesical vault. Care should be taken not to push this back into the bladder when a large drainage tube is intro-

duced and the cavity packed with gauze. This technic is modified to some extent according to the size of the prostate, as the incision must be made to correspond. In some later cases he has done a preliminary epicystotomy for drainage and for the treatment of the bladder and kidneys, and he thinks it is best, when this is to be done, to make it a preliminary operation.—*Journal American Medical Association.*

THE HEART IN PNEUMONIA.—The importance of an examination of the condition of the heart in pneumonia is insisted on by Wainwright, who describes the mechanism of dilatation and failure of the right heart in this disease. Its hypertrophy may be an important factor in producing pneumonia and other pulmonary diseases. He calls attention to one especially valuable physical sign, the pulmonic element of the second sound of the heart, which is underestimated by the profession. In young children this element is accentuated, and at the middle period of life the pulmonic and aortic are about equal in intensity, while in old age the aortic element becomes accentuated under normal conditions. In pneumonia, this well-pronounced accentuated second pulmonic sound becomes a safe guide for the administration of cardiac stimulants and aids in making an intelligent prognosis. A diminution of intensity of this sound is a confession of failure of the right heart, and should be a signal for the use of digitalis, alcohol, and other cardiac stimulants. The rapid and weak pulse is not so reliable. He speaks in regard to the use of digitalis, that when not indicated it is a pernicious drug, but when it is really indicated nothing is better. In the discussion following, Professor Andrew H. Smith takes a somewhat different view as regards the use of digitalis, holding that it has often done more harm than good. Its use is pernicious except when there is arrhythmia, indicating heart failure; then it may be of use to steady it.—*Ibid.*

ONE THOUSAND ONE HUNDRED CATARACT EXTRACTIONS.—(Dr. A. G. Archangelsky, *Roussky Vrach*, October 12th.) The patients operated on by the author included 552 males and 401 females, the first operation having been performed in 1887. The ages varied, but in 92 per cent of cases the cataracts were operated on in old people, and in 8 per cent in young children. The patient was prepared for the operation in each case by an enema and a general bath on the previous day. The eyelids, brows, etc., were scrubbed carefully with soap, then irrigated with sterile salt solution; the rest of the head was wrapped in sterile gauze, or towels, and the eye was cocainized. In 80 per cent of cases the operation consisted in the peripheral linear extraction of Von Graefe, the incision varying in size. The iridectomies were always made broad, as experience showed this to be of great advantage in facilitating the steps of the operation. The incision in the lens capsule was also wide. The lens was delivered by means of Critchett's loop, or by means of massage of the cornea from below upward by Daniel's spoon. The wound was then irrigated with salt solution and

the eye was dressed with sterile gauze, cotton, and bandages. In 114 cases the author made extractions without iridectomy, but experience showed that unless the cases were carefully selected for this operation there followed prolapse of the iris with all its consequences. Therefore she now operates in this manner only when the active reaction of the eye to light shows that the iris is sufficiently elastic to retract after the extraction, and when the cataract is thin, fluid, with a small nucleus. In 12 per cent of the extractions she noted prolapse of the vitreous body. In some cases this is productive of no harm, *i. e.*, when the eye is otherwise normal, but if there is also glaucoma, masked by the cataract, then the vitreous begins to ooze out before the eyes of the operator, and this is followed by hemorrhage of the central artery, which destroys vision then and there. This occurrence is not the fault of the operator's technics, but we must be careful to diagnose the presence of glaucoma before the operation, if possible, which is not always the case in senile cataracts complicated with glaucoma. In three cases the lens disappeared into the vitreous body. This is a rare and disagreeable complication, the origin of which probably lies in technical errors. As a rule, the patients were allowed to rise on the second day and to walk about the room, the dressing being changed daily. The rooms were not kept darkened, and the dressing was done in full daylight. The patient was discharged on the tenth day, the bandage having been finally removed on the ninth. Complications were observed in 29.5 per cent, and included the greatest variety of accidents, including deaths from external causes. In 2 per cent there was glaucoma as a complication, in 10 per cent there was iritis, and in 2.8 per cent infection of the wound.—*New York Medical Journal*.

INTERNATIONAL MEDICAL CONGRESS AT MADRID.—It is believed that a considerable number of American physicians will attend the Fourteenth International Medical Congress to be held in Madrid, April 23-30, 1903. As all those who wish to attend the congress have a common objective point, it is thought that they can be associated to advantage in one or more excursion parties. In this way the special features of the trip will be enhanced, and each individual will be surrounded by those who are personally congenial. By such association better accommodations can be secured and at a considerable reduction in price. Additional security will also be attained, as parts of the trip which include comparatively unfrequented routes of travel, will be under the charge of a traveling conductor who is thoroughly conversant with the language and customs of the countries visited. As there will doubtless be some divergence as to choice of routes, depending on individual inclination and previous opportunities of foreign travel, several returning routes have been selected, the itineraries of which, although separate from a portion of the journey, have been arranged that the principal points are visited together. The party will sail from New York City on April 11th, on the twin ocean steamer "Princess Irene," North German Lloyd, direct to Gibraltar. Tickets for the round trip,

including hotel and sight-seeing, \$265, \$375, and \$550, according to the tour selected. It is important that all who contemplate taking this trip should register at once, so that reservations for hotel in Madrid may be satisfactorily arranged. Final arrangements will be in the hands of the well-known conductors, Thos. Cook & Sons, which insures perfect and complete service in all details. Full information and copies of itinerary may be obtained by addressing either of the last-named undersigned. W. W. Keen, Walter Wyman, Nicholas Senn, C. A. L. Reed, Howard A. Kelly, A. Vanderveer, Jno. B. Murphy, Joseph Mathews, Robt. T. Morris, Lucien Howe, Chas. H. Hughes, W. F. Southard, Ramon Guiteras, 75 W. 55th St., New York City; Chas. Wood Fassett, Krug Park Place, St. Joseph, Mo.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.—The spring meeting of this Association will be held in Council Bluffs, Iowa, on Thursday and Friday, March 19 and 20. The membership of this Society includes the representative men of Iowa, Nebraska, Missouri, Kansas, North and South Dakota, and the meetings are always interesting and profitable to those who attend. A feature of the first day's session will be a symposium on Syphilis, and on the second day a symposium on Typhoid Fever will be presented. The following papers have been promised:

Hereditary Syphilis, R. C. Moore, Omaha, Neb.; Syphilitic Immunity, or Second Infection, A. C. Stokes, Omaha, Neb.; Syphilis as Affecting the Nervous System, F. E. Coulter, Omaha, Neb.; Congenital Syphilis in the Newborn and Young Infants, Mary Strong, Omaha, Neb.; Affections of the Eye due to Syphilis, W. B. Lemere, Omaha, Neb.; Treatment for Relief of Nasal Reflexes, with Report of Cases, F. W. Dean, Council Bluffs, Iowa; A Study of a Case of Dual Personality, S. Grover Burnett, Kansas City, Mo.; Embryology, Histology, and Pathology of the Eye (illustrated), Flavel B. Tiffany, Kansas City, Mo.; Report of Uses of X-Ray in Chronic Eczema, Acne, Cancer, etc., W. L. Kenney, St. Joseph, Mo.; The Psychologic Factor in Medicine and Its Application to Nervous Diseases, John Punton, Kansas City, Mo.; A Few Cases of Loss of Cornea from Neglected Dacryocystitis, D. C. Bryant, Omaha, Neb.; Orthopedic Surgery, Bloodless, Non-bloodless, and, Mechanical, Jas. W. Cokenower, Des Moines, Iowa; Some Cases of Cured Appendicitis, Harry H. Everett, Lincoln, Neb.; Diagnosis of Diastolic Heart Sound, LeRoy Crummer, Omaha, Neb.; Insanity and Tuberculosis Following Typhoid, and Report of Two Unusual Cases, F. E. Walker, Worthington, Minn.; Diseases Simulated by Typhoid Fever, D. T. Martin, Pomeroy, Iowa; Diphtheria, O. C. Kessler, Ravenwood, Mo. Regular program will be issued March 1st. Titles should be sent to the secretary not later than February 15th, as the program is limited to twenty-five papers. A cordial invitation is extended to the profession.

J. M. BARSTOW, Council Bluffs, Iowa, *President*.

CHAS. WOOD FASSETT, St. Joseph, Mo., *Secretary*.

